The Presidential Address

ON THE

UNSOLVED RIDDLES OF SCIENCE,

Delivered before the British Association for the Advancement of Science at Oxford, Aug. 8th, 1894,

BY THE MOST HONOURABLE

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GENTLEMEN,—My functions are of a more complicated character than usually is assigned to the occupants of this chair. As Chancellor of the University it is my duty to tender to the British Association a hearty welcome, which it is my duty as President of the Association to accept. As President of the Association I convey, most unworthily, the voice of English science, as many worthy and illustrious Presidents have done before me; but in representing the University I represent far more fittingly the learners who are longing to hear the lessons which the first teachers of English science have come as visitors to teach. I am bound to express on behalf of the University our sense of the good feeling towards that body which is the motive of this unusual arrangement. But as far as I am personally concerned, it is attended with some embarrassing results. In presence of the high priests of science I am only a layman, and all the skill of all the chemists the Association contains will not transmute a layman into any more precious kind of metal. Yet it is my hard destiny to have to address on scientific matters probably the most competent scientific audience in the world. If a country gentleman, who was also a colonel of Volunteers, were by any mental aberration on the part of the Commander-in-Chief to be appointed to review an army corps at Aldershot all military men would doubtless feel a deep compassion for his inevitable fate. I bespeak some spark of that divine emotion when I am attempting to discharge under similar conditions a scarcely less hopeless duty. At least, however, I have the consolation of feeling that I am free from some of the anxieties which have fallen to those who have preceded me as Presidents in this city. The relations of the Association and the University are those of entire sympathy and goodwill, as becomes common workers in the sacred cause of diffusing enlightenment and knowledge. But we must admit that it was not always so. A curious record of a very different state of feeling came to light last year in the interesting biography of Dr. Pusey, which is the posthumous work of Canon Liddon. In it is related the first visit of the Association to Oxford in 1832. Mr. Keble, at that time a leader of University thought, writes indignantly to his friend to complain that the honorary degree of D.C.L. had been bestowed upon some of the most distinguished members of the Association: "The Oxford doctors," he says, "have truckled sadly to the spirit of the times in receiving the hodge-podge of philosophers as they did." It is amusing at this distance of time to note the names of the hodge-podge of philosophers whose academical distinctions so sorely vexed Mr. Keble's gentle spirit. They were Brown, Brewster, Faraday, and Dalton. When we recollect the lovable and serene character of Keble's nature, and that he was at that particular date probably the man in the University who had the greatest power over other men's minds, we can measure the distance we have traversed since that time and the rapidity with which the converging paths of these two intellectual luminaries, the University and the Association, have approximated to each other. This sally of Mr. Keble was no passing or accidental caprice. It represented a deep-seated sentiment in this place of learning, which had its origin in historic causes and which has only died out in our time. One potent cause of it was that both bodies were teachers of science, but did not then in any degree attach the same meaning to that word. Science with the University for many generations bore a signification different from that which belongs to it in this assembly. It represented the knowledge which alone in the Middle Ages was thought worthy of the name of science. It was the knowledge gained not by external observation, but by mere reflection. The student's microscope was turned inward upon the recesses of his own brain; and when the supply of facts and realities failed, as it very speedily did, the scientific imagination was not wanting to furnish to successive generations an interminable series of conflicting speculations. *That* science—science in our academical sense—had its day of rapid growth, of boundless aspiration, of enthusiastic votaries. It fascinated the rising intellect of the time, and it is said—people were not particular about figures in those days—that its attractions were at one time potent enough to gather round the University 30,000 students, who for the sake of learning its teaching were willing to endure a life of the severest hardship. Such a state of feeling is now an archæological curiosity. The revolt against Aristotle is now some three centuries old. But the mental sciences, which were supposed to rest upon his writings, have retained some of their ascendency even till this day, and have only slowly and jealously admitted the rivalry of the growing sciences of observation. The subject is interesting to us, as this undecided state of feeling coloured the experiences of this Association at its last Oxford visit, nearly a generation later, in 1860. The warmth of the encounters which then took place has left a vivid impression on the minds of those who are old enough to have witnessed them. That much energy was on that occasion converted into heat may, I think, be inferred from the mutual distance which the two bodies have since maintained. Whereas the visit of 1832 was succeeded by another visit in fifteen years and the visit of 1847 was succeeded by another visit in thirteen years, the year 1860 was followed by a long and dreary interval of separation, which has only now, after four and thirty years, been terminated. It has required the lapse of a generation to draw the curtain of oblivion over those animated scenes. It was popularly supposed that deep divergences upon questions of religion were the motive force of those high controversies. To some extent that impression was correct; but men do not always discern the motives which are really urging them, and I suspect that in many cases religious apprehensions only masked the resentment of the older learning at the appearance and claims of its younger rival. In any case there is something worthy of note, and something that conveys encouragement, in the difference of the feeling which prevails now and the feeling that was indicated then. Few men are now influenced by the strange idea that questions of religious belief depend on the issues of physical research. Few men, whatever their creed, would now seek their geology in the books of their religion, or, on the other hand, would fancy that the laboratory or the microscope could help them to penetrate the mysteries which hang over the nature and the destiny of the soul of man. And the old learning no longer contests the share in education which is claimed by the new, or is blind to the supreme influence which natural knowledge is exercising in moulding the human mind.

A study of the addresses of my learned predecessors in this office shows me that the main duty which it falls to a President to perform in his introductory address is to remind you of the salient points in the annals of science since last the Association visited the town in which he is speaking. Most of them have been able to lay before you in all its interesting detail the history of the particular science of which each one of them was the eminent representative. If I were to make any such attempt I should only be telling you with very inadequate knowledge a story which is from time to time told you, as well as it can be told, by men who are competent to deal with it. It will be more suitable to my capacity if I devote the few observations I have to make to a survey, not of our science, but of our ignorance. We live in a small bright oasis of knowledge surrounded on all sides by a vast unexplored region of impenetrable mystery. From age to age the strenuous labour of successive generations wins a small strip from the desert and pushes forward the boundary of knowledge. Of such triumphs we are justly proud. It is a less attractive task—but yet it has its fascination as well as its uses—to turn our eyes to the undiscovered country which still remains to be won, to some of the stupendous problems of natural study which still defy our investigation. Instead, therefore, of recounting to you what has been done, or trying to forecast the discoveries of the future, I would rather draw your attention to the condition in which we stand towards three or four of the most important physical questions which it has been the effort of the last century to solve.

Of the scientific enigmas which still, at the end of the

nineteenth century, defy solution, the nature and origin of what are called the elements is the most notable. It is not, perhaps, easy to give a precise logical reason for the feeling that the existence of our sixty-five elements is a strange anomaly and conceals some much simpler state of facts; but the conviction is irresistible. We cannot conceive, on any possible doctrine of cosmogony, how these sixty-five elements came into existence. A third of them form the substance of this planet. Another third are useful, but somewhat rare. The remaining third are curiosities scattered haphazard, but very scantily, over the globe, with no other apparent function but to provide occupation for the collector and the chemist. Some of them are so like each other that only a chemist can tell them apart; others differ immeasurably from each other in every conceivable particular. In cohesion, in weight, in conductivity, in melting point, in chemical proclivities, they vary in every degree. They seem to have as much relation to each other as the pebbles on a sea beach or the contents of an ancient lumber-room. Whether you believe that creation was the work of design or of inconscient law, it is equally difficult to imagine how this random collection of dissimilar materials came together. Many have been the attempts to solve this enigma; but up till now they have left it more impenetrable than before. A conviction that here was something to discover lay beneath the persistent belief in the possibility of the transmutation of other metals into gold, which brought the alchemy of the Middle Ages into being. When the immortal discovery of Dalton established that the atoms of each of these elements have a special weight of their own, and that consequently they combine in fixed ponderable proportions from which they never depart, it renewed the hope that some common origin of the elements was in sight. The theory was advanced that all these weights were multiples of the weight of hydrogen—in other words, that each elementary atom was only a greater or a smaller number of hydrogen atoms compacted by some strange machinery into one. The most elaborate analyses, conducted by chemists of the highest eminence—conspicuously by the illustrious Stas,—were directed to the question whether there was any trace in fact of the theoretic idea that the atoms of each element consist of so many atoms or even of so many half atoms of hydrogen. But the reply of the laboratories has always been clear and certain—that there is not in the facts the faintest foundation for such a theory.

Then came the discovery of the spectral analysis, and men thought that with an instrument of such inconceivable delicacy we should at last find out something as to the nature of the atom. The result has been wholly disappointing. Spectral analysis in the hands of Dr. Huggins and Mr. Lockyer and others has taught us things of which the world little expected to be told. We have been enabled to measure the speed with which clouds of blazing hydrogen course across the surface of the sun; we have learnt the pace—the fabulous pace—at which the most familiar stars have been for ages approaching to or receding from our planet without apparently affecting the proportions of the patterns which, as far as historical record goes back, they have always delineated on the evening sky. We have received some information about the elementary atoms themselves. We have learnt that each sort of atom, when heated, strikes upon the ether a vibration, or set of vibrations, whose rate is all its own; and that no one atom, or combination of atoms, in producing its own spectrum encroaches, even to the extent of a single line, upon the spectrum that is peculiar to its neighbour. We have learnt that the elements which exist in the stars and specially in the sun are mainly those with which we are familiar upon earth. There are a few lines in excess to which we can give no terrestrial name; and there are some still more puzzling gaps in our list. It is a great aggravation of the mystery which besets the question of the elements, that among the lines which are absent from the spectrum of the sun those of nitrogen and oxygen stand first. Oxygen constitutes the largest portion of the solid and liquid substance of our planet, so far as we know it; and nitrogen is very far the predominant constituent of our atmosphere. If the earth is a detached bit whirled off the mass of the sun, as cosmogonists love to tell us, how comes it that in leaving the sun we cleaned him out so completely of his nitrogen and oxygen that not a trace of these gases remains behind to be discovered even by the sensitive vision of the spectroscope? All these things the discovery of spectrum analysis has added to our knowledge; but it has left us as ignorant as ever as to the nature of the capricious differences which separate the atoms from each other, or the cause to which those differences are due.

In the last few years the same enigma has been approached from another point of view by Professor Mendeléeff. The periodic law which he has discovered reflects on him all the honour that can be earned by ingenious, laborious, and successful research. He has shown that this perplexing list of elements can be divided into families of about seven, speaking very roughly; that those families all resemble each other in this, that as to weight, volume, heat, and laws of combination the members of each family are ranked among themselves in obedience to the same rule. Each family differs from the others; but each internally is constructed upon the same plan. It was a strange discovery—strangest of all in its manifest defects. For in the plan of his families there were blanks left; places not filled up because the properly constituted elements required, according to his theory, had not been found to fill them. For the moment their absence seemed a weakness in the Professor's idea, and gave an arbitrary aspect to his scheme. But the weakness was turned into strength when, to the astonishment of the scientific world, three of the elements which were missing made their appearance in answer to his call. He had described beforehand the qualities they ought to have; and gallium, germanium, and scandium, when they were discovered shortly after the publication of his theory, were found to be duly clothed with the qualities he required in each. This remarkable confirmation has left Mendeléeff's periodic law in an unassailable position; but it has rather thickened than dissipated the mystery which hangs over the elements. The discovery of these coördinate families dimly points to some identical origin, without suggesting the method of their genesis or the nature of their common parentage. If they were organic beings all our difficulties would be solved by muttering the comfortable word "evolution"—one of those indefinite words from time to time vouchsafed to humanity which have the gift of alleviating so many perplexities and masking so many gaps in our knowledge. But the families of elementary atoms do not breed; and we cannot therefore ascribe their ordered difference to accidental variations perpetuated by heredity under the influence of natural selection. The rarity of iodine and the abundance of its sister chlorine cannot be attributed to the survival of the fittest in the struggle for existence. We cannot account for the minute difference which persistently distinguishes nickel from cobalt by ascribing it to the recent inheritance by one of them of an advantageous variation from the parent stock. The upshot is that all these successive triumphs of research, Dalton's, Kirchhoff's, Mendeléeff's, greatly as they have added to our store of knowledge, have gone but little way to solve the problem which the elementary atoms have for centuries presented to mankind. What the atom of each element is, whether it is a movement, or a thing, or a vortex, or a point having inertia; whether there is any limit to its divisibility, and, if so, how that limit is imposed; whether the long list of elements is final, or whether any of them have any common origin: all these questions remain surrounded by a darkness as profound as ever. The dream which lured the alchemists to their tedious labours, and which may be said to have called chemistry into being, has assuredly not been realised, but it has not yet been refuted. The boundary of our knowledge in this direction remains where it was many centuries ago.

The next discussion to which I should look in order to find unsolved riddles which have hitherto defied the scrutiny of science would be the question of what is called the ether. The ether occupies a highly anomalous position in the world of science. It may be described as a half-discovered entity. I dare not use any less pedantic word than entity to designate it, for it would be a great exaggeration of our knowledge if I were to speak of it as a body or even as a substance. When, nearly a century ago, Young and Fresnel discovered that the motions of an incandescent particle were conveyed to our eyes by undulation it followed that between our eyes and the particle there must be something to undulate. In order to furnish that something the notion of the ether was conceived, and for more than two generations the main, if not the only, function of the word "ether" has been to furnish a nominative case to the verb "to undulate." Lately our conception of this entity has received a notable extension. One of the most brilliant of the services which Professor Maxwell has rendered to science has been the discovery that the figure which expressed the velocity of

light also expressed the multiplier required to change the measure of static or passive electricity into that of dynamic or active electricity. The interpretation reasonably affixed to this discovery is that, as light and the electric impulse move approximately at the same rate through space, it is probable that the undulations which convey them are undulations of the same medium; and as induced electricity penetrates through everything, or nearly everything, it follows that the ether, through which its undulations are propagated, must pervade all space, whether empty or full, whether occupied by opaque matter or transparent matter, or by no matter at all. The attractive experiments by which the late Professor Herz illustrated the electric vibrations of the ether will only be alluded to by me in order that I may express the regret, deeply and generally felt, that death should have terminated prematurely the scientific career which had begun with such brilliant promise and such fruitful achievements; but the mystery of the ether, though it has been made more fascinating by these discoveries, remains even more inscrutable than before. Of this all-pervading entity we know absolutely nothing except this one fact—that it can be made to undulate. Whether, outside the influence of matter on the motion of its waves, ether has any effect on matter, or matter upon it, is absolutely unknown. And even its solitary function of undulating ether performs in an abnormal fashion which has caused infinite perplexity. All fluids that we know transmit any blow they have received by waves which undulate backwards and forwards in the path of their own advance. The ether undulates athwart the path of the wave's advance. The genius of Lord Kelvin has recently discovered what he terms a "labile" state of equilibrium, in which a fluid that is infinite in its extent may exist, and may undulate in this eccentric fashion without outraging the laws of mathematics. I am no mathematician, and I cannot judge whether this reconciliation of the action of the ether with mechanical law is to be looked upon as a permanent solution of the question or is only what diplomatists call a *modus vivendi*. In any case it leaves our knowledge of the ether in a very rudimentary condition. It has no known qualities except one, and that quality is in the highest degree anomalous and inscrutable. The extended conception which enables us to recognise ethereal waves in the vibrations of electricity has added infinite attraction to the study of those waves, but it carries its own difficulties with it. It is not easy to fit in the theory of electrical ether waves with the phenomena of positive and negative electricity, and as to the true significance and cause of those counteracting and complementary forces to which we give the provisional names of "negative" and "positive," we know about as much now as Franklin knew a century and a half ago.

I have selected the elementary atoms and the ether as two instances of the obscurity that still hangs over problems which the highest scientific intellects have been investigating for several generations. A more striking but more obvious instance still is life—animal and vegetable life—the action of an unknown force on ordinary matter. What is the mysterious impulse which is able to strike across the ordinary laws of matter and twist them for a moment from their path? Some people demur to the use of the term "vital force" to designate this impulse. In their view the existence of such a force is negatived by the fact that chemists have been able by cunning substitutions to produce artificially the peculiar compounds which in nature are only found in organisms that are or have been living. These compounds are produced by some living organism in the performance of the ordered series of functions proper to its brief career. To counterfeit them—as has been done in numerous cases—does not enable us to do what the vital force alone can effect—to bring the organism itself into existence and to cause it to run its appointed course of change. This is the unknown force which continues to defy, not only our imitation, but our scrutiny. Biology has been exceptionally active and successful during the last half century. Its triumphs have been brilliant, and they have been rich enough, not only in immediate result, but in the promise of future advance. Yet they give at present no hope of penetrating the great central mystery. The progress which has been made in the study of microscopic life has been very striking, whether or not the results which are at present inferred from it can be taken as conclusive. Infinitesimal bodies found upon the roots of plants have the proud office of capturing and taming for us the free nitrogen of the air, which, if we are to live at all, we must consume and assimilate, and yet which, without the help of our microscopic ally, we could not draw for any useful purpose from the ocean of nitrogen in which we live. Microscopic bodies are convicted of causing many of the worst diseases to which flesh is heir, and the guilt of many more will probably be brought home to them in due time; and they exercise a scarcely less sinister or less potent influence on our race by the plagues with which they destroy some of the most valuable fruits of husbandry, such as the potato, the mulberry, and the vine. Almost all their power resides in the capacity of propagating their kind with infinite rapidity, and up to this time science has been more skilful in describing their ravages than in devising means to hinder them. It would be ungrateful not to mention two brilliant exceptions to this criticism: the antiseptic surgery, which we owe chiefly to Lister, and the inoculation against anthrax, hydrophobia, and perhaps some other diseases, which we owe to Pasteur, must be recorded as splendid victories over the countless legions of our infinitesimal foes. Results like these are the great glory of the scientific workers of the past century. Men may, perhaps, have overrated the progress of nineteenth century research in opening the secrets of nature, but it is difficult to overrate the brilliant service it has rendered in ministering to the comforts and diminishing the sufferings of mankind.

If we are not able to see far into the causes and origin of life in our own day it is not probable that we shall deal more successfully with the problem as it arose many million years ago. Yet certainly the most conspicuous event in the scientific annals of the last half century has been the publication of Mr. Darwin's work on the "Origin of Species," which appeared in 1859. In some respects, in the depth of the impression which it made on scientific thought, and even on the general opinion of the world, its momentous effect can hardly be overstated. But at this distance of time it is possible to see that some of its success has been due to adventitious circumstances. It has had the chance of enlisting among its champions some of the most powerful intellects of our time, and perhaps the still happier fortune of appearing at a moment when it furnished an armoury of weapons to men who were not scientific for use in the bitter but transitory polemics of the day. But far the largest part of its accidental advantages was to be found in the remarkable character and qualifications of its author. The equity of judgment, the simple-minded love of truth, and the patient devotion to the pursuit of it through years of toil and of other conditions the most unpropitious—these things endeared to numbers of men everything that came from Charles Darwin apart from its scientific merit or literary charm; and, whatever final value may be assigned to his doctrine, nothing can ever detract from the lustre shed upon it by the wealth of his knowledge and the infinite ingenuity of his resource. The intrinsic power of his theory is shown at least in this one respect—that in the department of knowledge with which it is concerned it has effected an entire revolution in the methods of research. Before his time the study of living nature had a tendency to be merely statistical; since his time it has become predominantly historical. The consideration how any organic body came to be what it is occupies a far larger area in any inquiry now than the mere description of its actual condition; but this question was not predominant—it may almost be said to have been ignored—in the botanical and zoological study of sixty years ago.

Another lasting and unquestioned effect has resulted from Darwin's work. He has, as a matter of fact, disposed of the doctrine of the immutability of species. It has been mainly associated in recent days with the honoured name of Agassiz, but with him has disappeared the last defender of it who could claim the attention of the world. Few now are found to doubt that animals separated by differences far exceeding those that distinguish what we know as species have yet descended from common ancestors; but there is much less agreement as to the extent to which this common descent can be assumed or the process by which it has come about. Darwin himself believed that all animals were descended from "at most four or five progenitors," adding that "there was grandeur in the view that life had been originally breathed by the Creator into a few forms or one." Some of his more devoted followers, like Professor Haeckel, were prepared to go a step further and to contemplate a crystal as

the probable ancestor of the whole fauna and flora of this planet.

To this extent the Darwinian theory has not effected the conquest of scientific opinion; and still less is there any unanimity in the acceptance of natural selection as the sole or even the main agent of whatever modifications may have led up to the existing forms of life. The deepest obscurity still hangs over the origin of the infinite variety of life. Two of the strongest objections to the Darwinian explanation appear still to retain all their force.

I think Lord Kelvin was the first to point out that the amount of time required by the advocates of the theory for working out the process they had imagined could not be conceded without assuming the existence of a totally different set of natural laws from those with which we are acquainted. His view was not only based on profound mechanical reasoning, but it was so plain that any layman could comprehend it. Setting aside arguments deduced from the resistance of the tides, which may be taken to transcend the lay understanding, his argument from the refrigeration of the earth requires little science to apprehend it. Everybody knows that hot things cool, and that according to their substance they take more or less time in cooling. It is evident, from the increase of heat as we descend into the earth, that the earth is cooling, and we know by experiment, within certain wide limits, the rate at which its substances, the matters of which it is constituted, are found to cool. It follows that we can approximately calculate how hot it was so many million years ago; but if at any time it was hotter at the surface by 50° F. than it is now life would then have been impossible upon the planet, and therefore we can without much difficulty fix a date before which organic life on earth cannot have existed. Basing himself on these considerations Lord Kelvin limited the period of organic life upon the earth to a hundred million years, and Professor Tait in a still more penurious spirit cut that hundred down to ten; but on the other side of the account stand the claims of the geologists and biologists. They have revelled in the prodigality of the ciphers which they put at the end of the earth's hypothetical life. Long cribbed and cabined within the narrow bounds of the popular chronology, they have exulted wantonly in their new freedom. They have lavished their millions of years with the open hand of a prodigal heir indemnifying himself by present extravagance for the enforced self-denial of his youth; but it cannot be gainsaid that their theories require at least all this elbow-room. If we think of that vast distance over which Darwin conducts us from the jelly-fish lying on the primeval beach to man as we know him now, if we reflect that the prodigious change requisite to transform one into the other is made up of a chain of generations, each advancing by a minute variation fromt he form of its predecessor, and if we further reflect that these successive changes are so minute that in the course of our historical period—say 3000 years—this progressive variation has not advanced by a single step perceptible to our eyes in respect to man or the animals and plants with which man is familiar, we shall admit that for a chain of change so vast, of which the smallest link is longer than our recorded history, the biologists are making no extravagant claim when they demand at least many hundred million years for the accomplishment of the stupendous process. Of course, if the mathematicians are right the biologists cannot have what they demand. If, for the purposes of their theory, organic life must have existed on the globe more than a hundred million years ago, it must, under the temperature then prevailing, have existed in a state of vapour. The jelly-fish would have been dissipated in steam long before he had had a chance of displaying the advantageous variation which was to make him the ancestor of the human race. I see, in the eloquent discourse of one of my most recent and most distinguished predecessors in this chair, Sir Archibald Geikie, that the controversy is still alive. The mathematicians sturdily adhere to their figures, and the biologists are quite sure the mathematicians must have made a mistake. I will not get myself into the line of fire by intervening in such a controversy. But until it is adjusted the laity may be excused for returning a verdict of "Not proven" upon the wider issues the Darwinian school has raised.

The other objection is best stated in the words of an illustrious disciple of Darwin, who has recently honoured this city by his presence—I refer to Professor Weismann. But in referring to him I cannot but give, in passing, a feeble expression to the universal sorrow with which in this place the news was received that Weismann's distinguished antagonist, Professor Romanes, had been taken from us in the outset and full promise of a splendid scientific career. The gravest objection to the doctrine of natural selection was expressed by Weismann in a paper published a few months ago, not as agreeing to the objection, but as resisting it, and therefore his language may be taken as an impartial statement of the difficulty. "We accept natural selection," he says, "not because we are able to demonstrate the process in detail, not even because we can with more or less ease imagine it, but simply because we must—because it is the only possible explanation that we can conceive. We must assume natural selection to be the principle of the explanation of the metamorphoses, because all other apparent principles of explanation fail us, and it is inconceivable that there could yet be another capable of explaining the adaptation of organisms without assuming the help of a principle of design." There is the difficulty. We cannot demonstrate the process of natural selection in detail; we cannot even, with more or less ease, imagine it. It is purely hypothetical. No man, so far as we know, has ever seen it at work. An accidental variation may have been perpetuated by inheritance, and in the struggle for existence the bearer of it may have replaced, by virtue of the survival of the fittest, his less improved competitors; but as far as we know no man or succession of men has ever observed the whole process in any single case, and certainly no man has recorded the observation. Variation by *artificial* selection, of course, we know very well; but the intervention of the cattle breeder and the pigeon fancier is the essence of artificial selection. It is effected by their action in crossing, by their skill in bringing the right mates together to produce the progeniture they want. But in natural selection who is to supply the breeder's place? Unless the crossing is properly arranged the new breed will never come into being. What is to secure that the two individuals of opposite sexes in the primeval forest, who have been both accidentally blessed with the same advantageous variation, shall meet and transmit by inheritance that variation to their successors? Unless this step is made good the modification will never get a start; and yet there is nothing to ensure that step except pure chance. The law of chances takes the place of the cattle breeder and the pigeon fancier. The biologists do well to ask for an immeasurable expanse of time if the occasional meetings of advantageously varied couples from age to age are to provide the pedigree of modifications which unite us to our ancestor the jelly-fish. Of course, the struggle for existence and the survival of the fittest would in the long run secure the predominance of the stronger breed over the weaker. But it would be of no use in setting the improved breed going. There would not be time. No possible variation which is known to our experience, in the short time that elapses in a single life between the moment of maturity and the age of reproduction, could enable the varied individual to clear the field of all competitors, either by slaughtering or starving them out. But unless the struggle for existence took this summary and internecine character there would be nothing but mere chance to secure that the advantageously varied bridegroom at one end of the wood should meet the bride who by a happy contingency had been advantageously varied in the same direction at the same time at the other end of the wood. It would be a mere chance if they ever knew of each other's existence—a still more unlikely chance that they should resist on both sides all temptations to a less advantageous alliance. But unless they did so the new breed would never even begin, let alone the question of its perpetuation after it had begun. I think Professor Weismann is justified in saying that we cannot, either with more or less ease, imagine the process of natural selection.

It seems strange that a philosopher of Professor Weismann's penetration should accept as established a hypothetical process the truth of which he admits that he cannot demonstrate in detail and the operation of which he cannot even imagine. The reason that he gives seems to me instructive of the great danger scientific research is running at the present time—the acceptance of mere conjecture in the name and place of knowledge in preference to making frankly the admission that no certain knowledge can be attained. "We accept natural selection," he says, "because we must—because it is the only possible explanation that we can conceive." As a politician I know that argument very well. In political controversy it is sometimes said of a disputed proposal that it "holds the field," that it must be accepted because

no possible alternative has been suggested. In politics there is occasionally a certain validity in the argument, for it sometimes happens that some definite course must be taken even though no course is free from objection. But such a line of reasoning is utterly out of place in science. We are under no obligation to find a theory if the facts will not provide a sound one. To the riddles which nature propounds to us the profession of ignorance must constantly be our only reasonable answer. The cloud of impenetrable mystery hangs over the development and still more over the origin of life. If we strain our eyes to pierce it, with the foregone conclusion that some solution is and must be attainable, we shall only mistake for discoveries the figments of our own imagination. Professor Weismann adds another reason for his belief in natural selection, which is certainly characteristic of the time in which we live. "It is inconceivable," he says, "that there should be another principle capable of explaining the adaptation of organisms without assuming the help of a principle of design." The whirligig of time assuredly brings its revenges. Time was, not very long ago, when the belief in creative design was supreme. Even those who were sapping its authority were wont to pay it a formal homage, fearing to shock the public conscience by denying it. Now the revolution is so complete that a great philosopher uses it as a *reductio ad absurdum*, and prefers to believe that which can neither be demonstrated in detail nor imagined rather than run the slightest risk of such a heresy.

I quite accept the Professor's dictum that if natural selection is rejected we have no resource but to fall back on the mediate or immediate agency of a principle of design. In Oxford, at least, he will not find that argument is conclusive, nor, I believe, among scientific men in this country generally, however imposing the names of some whom he may claim for that belief. I would rather lean to the conviction that the multiplying difficulties of the mechanical theory are weakening the influence it once had acquired. I prefer to shelter myself in this matter behind the judgment of the greatest living master of natural science among us, Lord Kelvin, and to quote as my own concluding words the striking language with which he closed his address from this chair more than twenty years ago: "I have always felt," he said, "that the hypothesis of natural selection does not contain the true theory of evolution, if evolution there has been in biology. ..... I feel profoundly convinced that the argument of design has been greatly too much lost sight of in recent zoological speculations. Overpoweringly strong proofs of intelligent and benevolent design lie around us, and if ever perplexities, whether metaphysical or scientific, turn us away from them for a time they come back upon us with irresistible force, showing to us through nature the influence of a free will, and teaching us that all living things depend on one everlasting Creator and Ruler."

Address in Public Medicine.

Delivered before the British Medical Association at Bristol, Aug. 3rd, 1894,

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MEDICAL OFFICER OF HEALTH OF DUBLIN.

IT has been said humorously, yet not without a touch of sarcasm, that the physicians desire for their patients great longevity and frequent illness. Some years ago a writer in the *Scotsman* objected to the appointment, as medical officers of health, of medical men engaged in practice, on the ground that "no sane body of men can bring themselves to believe that medical practitioners, whose livelihood depends upon sickness, are likely to exert themselves in exterminating it." To such an audience as that which I have the honour of addressing, no arguments or proofs are necessary to refute this writer's assertion. Those of us who devote ourselves solely to curative medicine are as anxious as those who practise only preventive medicine to prolong human life and avert disease. The desire to discover and eradicate the causes of disease, so as to convert man almost into a race of terrestrial immortals, has for centuries been characteristic of the professors of medicine. Even in our own time we witness the revival of the old idea of the *elixir vitæ* in the testicular juice of Brown-Séquard and in Malincanico's search for the bacillus of senility.[1] Are there not enthusiasts amongst us who, grasping the conception of Weismann[2] that there are somatic unicellular organisms endowed with the potentiality of everlasting life believe in the possibility of conferring upon the multicellular organism—man—the immortality of the unicellular organisms which form portions of every living being? But, leaving this region of speculation, and dealing only with solid facts, we may claim that medical men stand pre-eminent amongst those who devise means for prolonging life and lessening sickness. They were the first to show that pure water was indispensable to health, that the efficient drainage of houses and of towns was a prime requisite to the maintenance of the health of communities, that overcrowding spreads disease if it does not develop it, and that the high mortality associated with many industrial occupations might be lessened by the adoption of certain precautions. The lives saved by the adoption of Jenner's sublime discovery of vaccination amount to millions. Why is bacteriology so eagerly cultivated by thousands of medical men, and by many of them with no view to pecuniary reward? Partly, no doubt, for the desire of enlarging the boundaries of the science of biology, but chiefly as a means of counteracting disease. Prophylaxis wholly, and etiology chiefly, are studied for the purposes of preventing disease, and consequently of diminishing the employment of the medical practitioner. No doubt some work for medical men is afforded by the appointment, in recent times, of officers of health; but this kind of work engages the time of but a very limited number of the profession. As so important do medical men regard preventive medicine that they have instituted special diplomas for proficiency in that department, and many who hold them have no intention of becoming medical officers of health. Plato, in his "Republic," shows a high appreciation of the importance of public hygiene and State medicine. The government of a community was, in his opinion, incomplete unless a State physician took an active part in it. In the government of modern communities the medical man plays, even from a public health point of view, a very subordinate part—in these countries, at least. When they are appointed on public boards—which is rarely the case—they usually occupy the lower positions. No medical man has a place in the Treasury, the Home Office, the Colonial Office, the Council for India, the Board of Trade, or the Charity Commission. He is never made even a Master in Lunacy. The only medical man who occupies a position which gives him a direct share in the government of any great department of the State is Sir Walter Foster, Parliamentary Secretary to the Local Government Board. There are upwards of 250 Privy Councillors in Great Britain and Ireland, but only two of them have medical qualifications. One of these is Lord Playfair, who has not won any of his well-deserved honours in his capacity as a doctor of medicine; the other is Professor Huxley. In Germany medical men are constantly created Privy Councillors, and the government of that empire is largely in the hands of those who possess the highly prized titles of Professor and Doctor. The Prime Minister of Hungary is Dr. Alexander Wekerle. In Ireland medical men seem to have a better chance of attaining to the higher posts in the public departments. One of the five members of the Local Government Board must be a medical man. Two of the Commissioners of Control of Lunatic Asylums are physicians, and they constitute the inspectors of those institutions. The Registrar-General was once a practising physician. As the present tendency in the social world is the upheaval of the lower strata of society towards its "upper crust," as the working man has become a senator, and mechanics are being metamorphosed into justices of the peace, we may hope soon to find some of the members of our profession following in the wake of Sir Walter Foster and taking high places in the executive government of the country. Hitherto we have only been permitted to suggest measures for the promotion of the public health; it is time that we should have a more direct influence in sanitary legislation and in the administration of the sanitary laws. There are many medical men eminently fitted by their culture, experience, and ability to

[1] Trattato sulla Possibilitate della Prolongazione illimitata della Vita Remana.

[2] Weismann's Essays. Translated by E. B. Poulton, S. Schönland, and B. E. Shipley. Clarendon Press. Oxford, 1889.

hold the office of Minister of Public Health—aye, even with a seat in the Cabinet.

WHY IS LIFE IN TOWNS SHORTER THAN IN THE COUNTRY?

In 1893 the death-rate in England and Wales was 19·17 per 1000 persons living. In the thirty-three largest towns the rate was 21·57. In England and Wales, less the thirty-three towns, the rate was 17·9. The ages of the people in the towns are more favourable as regards mean expectation of life, and the proportion of females—who have in the country at large a lower death-rate than males—is greater in the towns. Corrected for age and sex distribution, the death-rate in the thirty-three towns was 23 32, and in the rest of the country 17·62. Thus, the mortality rate in the towns was 5·7 per 1000 in excess of that in the rest of the country. The difference between the rural rate and that in some of the towns was appalling. For example, the difference, as regards Liverpool, amounted to no less than 13·17 per 1000. In that city there died, in 1893 two persons for every death in an equal population in many parts of England. For example, in the outer ring of London, population 1 543,296, the death-rate in 1893 was only 15·4. Why has one British town twice as high a mortality as another, and why is the average duration of life so much greater in rural districts than in the towns? These are problems of momentous import, the solution of which should be the aim of the sanitarian. The causes are, no doubt, highly complex, and many of them are local. Some of them are easily discoverable—such as over-crowded tenements, ill-ventilated houses, defective sanitary accommodation and drainage, accumulations of filth, ill-kept slaughter-houses and dairy yards, noxious effluvia from factories and workshops, and imperfect combustion of fuel. The close approximation of persons to each other in towns favours the spread of infective diseases. But with all our knowledge of these causes of high death-rates we still are at a loss to account for great differences between towns which appear to be placed under almost identical conditions as regards their salubrity. Amongst the poor in all towns birth-rates and death rates stand highest. Their greater fecundity and high marriage-rates compensate for their enormous mortality. The poorer a man is, the more likely is he to marry. It is a remarkable but undeniable fact that a man's desire for matrimony is in the inverse proportion to his ability to maintain a family. In the city of Dublin the birth-rate in 1893 was 32 per 1000 of the population, and the death-rate was 29·1. In the townships which surround the city, and in which the proportion of the poorer classes is small, the birth-rate was 18·7 and the death-rate 21. In Dublin, in 1893, 15,579 persons were, together with their families, classified as "professional and independent." Their general death-rate was 21·6, their zymotic death-rate 1·3; 81,469 persons belonged to the middle class: their death-rate was 20·3, and their zymotic death-rate was 2·7. There were 83,472 labourers, hawkers, porters, &c., and their families: their death-rate was 32·1, and their zymotic death-rate 4·4. The death-rate of children under five years o'd in those classes was as follows:—Independent and professional, 19·5 per 1000; middle class 43·4; hawkers, porters, labourers, &c., 104. These figures show the appalling mortality of the children of the poor. It is the high mortality of infants which chiefly raises the urban death-rates. If the deaths of children under five years old were excluded there would only be a difference of about 2 per 1000 between the town and country death-rates. A large proportion of the lower classes in the towns is underfed, insufficiently clothed, and badly lodged. These unfavourable conditions tell most severely upon the very young, amongst whom I have shown death's harvests are so abundant. It is not so much the infective diseases which thin the ranks of the toilers of the great towns—it is constitutional maladies which mow them down. The means for lessening the excessive mortality of the very poor do not lie altogether in the domain of public medicine; they must also be worked out by the political economist, aided by those philanthropists whose pecuniary resources enable them to gratify their benevolent instincts. Just in proportion as the people are well fed, clad, and lodged will they, by reason of their consequent higher vitality, be able to resist the assaults of both constitutional and infective diseases.

COMPARATIVE POVERTY OF TOWNS IN RELATION TO DEATH-RATES.

As higher death-rates prevail amongst the poor than obtain in the case of the well-to-do classes, an undue proportion of very poor people in a town must necessarily cause a higher death-rate than where the poor are comparatively few. This will be the case even where the general hygienic conditions of both towns are much alike. Mr. Sergeant, in a paper published in the *Journal of the Statistical Society* for June, 1864, argues that in estimating the death-rate of Birmingham as compared with that of London an allowance of 1·5 per 1000 should be made in favour of the former city, on account of the comparatively small proportion of the affluent classes which inhabit it. The recorded death-rates of towns are corrected for age and sex distribution. The death-rates of persons arranged in groups according to ages in England and Wales are determined. It is known that females enjoy a longer period of life than males. If the proportion of persons whose mean expectation of life is greatest in a town exceeds that in the country at large, a correction is made for this condition of things. So also, if females are, relatively to males, more numerous in a town than in all England and Wales, a correction is also made for that state of the population. The recorded deaths for the English towns are, with few exceptions, below the rates when corrected for age and sex distribution. If a similar correction could be made in cases where the poor classes (amongst whom everywhere the death-rate is highest) are in excess it would be most desirable. I have endeavoured to find in the Census reports of 1891 materials for such a correction; but the results are disappointing. It may be considered that the comparative poverty of towns might be to some extent determined by ascertaining the proportion of the population who were domestic servants. On the whole, we find that in the towns where the domestic servants are very numerous the death-rates are low. Croydon, for example, had the lowest death-rate of the great towns in 1893—namely, 16·99 (corrected)—and the highest proportion of domestics—namely, 8·8 per cent. of the population—or in the ratio of 44 per cent. of the heads of families. Bath and Hastings[3] are the only two of the sixty-two largest towns which exceed Croydon as regards proportion of domestics. In Bath the domestic servants constitute 11·4 per cent. of the population, and 49 to every 100 heads of families; in Hastings, 11·11 per cent. of the population and 59 to every 100 heads of families. As a rule, in the towns where but a small proportion of the population are domestic servants death-rates are high, and *vice versâ*; but there are some exceptions. In the sixty-two largest towns the average percentage of domestic servants is 4·6. The ten great towns which had the highest death-rates in 1893 have a mean percentage of 2·86, whilst in the ten great towns with lowest death-rates the percentage is 4·81. (See Table in the first column of the opposite page.)

The percentage of tenements which consist each of a single room might, one would suppose, afford an indication of the poverty of a town; I find, however, the most extraordinary differences in towns, salubrious and otherwise, as regards one-room tenements. In Plymouth, which is a fairly healthy town, 24·4 per cent. of the tenements consist of one room each, and 27 per cent. of two rooms. In Preston, which has nearly the highest death-rate in England, there are only 5 per cent. of the tenements consisting of a single apartment. Devonport, a moderately healthy town, has the largest percentage of one-room tenements—namely, 25·2. Hanley has only 0 1 per cent. of these tenements; thus one-room dwellings are 252 times more numerous in Devonport than in Hanley. In London 18·4 per cent. of the dwellings are one-room tenements. Here I may mention that in the sixty-two largest towns there are, on the average, 12·5 per cent. of one-room tenements, or, excluding London, 3·8. In the provincial towns, with the exception of Liverpool (7·7 per cent.), all the high death-rate towns have very few one-room dwellings. In Hanley the local authorities will not permit the erection of one-room dwellings. Although a manufacturing town—the principal in the Potteries district—and its industrial occupations admittedly unhealthy, its death-rate in 1893 was only 20·2. In the Scotch towns one-room houses, as they are termed there, are even more common than in England. In 1873 Dr. Russell found that they constituted 32·8 per cent. of the total houses; but the proportion has been steadily diminishing since that year. In Dublin I have estimated that one-third of the families live in single rooms.

Although I have shown that in many salubrious towns the one-room dwellings preponderate, very bad accounts of this kind of dwelling have been given by competent observers.

[3] Birth-rate in Bath, in 1893, 19·5; death-rate 18·5. Birth-rate in Hastings in 1893, 19·3; death-rate 14·27.

Carnelly and Anderson have shown that the death-rate from diarrhœa per 10 000 of the population was 19 6 in four or more room dwellings, 27·6 in three-room, 39 in two-room, and 59·8 in one-room dwellings. Kotosi, of Budapest, has, in an elaborate memoir, demonstrated the bad influence on health produced by living in one- or two-room tenements. Dr. Russell, of Glasgow, stated that in 1885, whilst the general death rate of that city was 25, the rate amongst the occupants of one-room houses was 27, of two rooms 26, of three rooms 20, and of four rooms 18. It is stated that in 1885 there were only 75,000 out of 1,315,000 of the population of Berlin living in single rooms, yet that they contributed

Towns.	Percentage of domestic servants.	
	To heads of families.	To total population.
Aston Manor	11	2·2
Barrow-in-Furness	22	4·0
Bath	49	11·4
Birkenhead	30	6·0
Birmingham	14	2·9
Blackburn	10	2·0
Bolton	10	2·0
Bradford...	12	2·6
Brighton	41	9·0
Bristol	26	5·7
Burnley	11	2·2
Bury	11	2·3
Cardiff	20	3·9
Coventry	14	3·0
Croydon	44	8·8
Derby	19	3·9
Devonport	15	3·4
Gateshead	14	2·8
Grimsby...	19	4·0
Halifax	11	2·4
Hanley	14	2·7
Hastings	59	11·7
Huddersfield	14	3·1
Ipswich	29	6·5
Kingston-upon-Hull	13	4·0
Leeds	13	2·8
Leyton	18	3·7
Leicester	14	3·0
Liverpool	19	3·9
London	27	6·1
Manchester	15	3·1
Merthyr Tydvil	19	3·7
Middlesbrough...	17	3·1
Newcastle-on-Tyne	23	4·7
Newport	23	4·4
Northampton	19	3·8
Norwich	20	4·5
Nottingham	16	3·4
Oldham	9	1·8
Plymouth	22	5·1
Portsmouth	21	4·5
Preston	12	2·4
Reading	28	5·6
Rochdale	10	2·2
St. Helens	16	2·8
Salford	14	2·8
Sheffield	17	3·6
South Shields	17	3·5
Southampton	25	5·2
Stockport	11	2·5
Sunderland	17	3·7
Swansea	21	4·3
Tottenham	16	3·3
Walsall	17	3·2
Warrington	14	2·6
West Bromwich	13	2·5
West Ham	14	2·8
Wigan	14	2·6
Willesden	31	6·5
Wolverhampton	20	3·8
York	29	5·9
Ystradyfodwg	16	2·9
Sixty-two towns (including London) ...	21	4·6
Sixty-one provincial towns	18	3·7

nearly one-half of the deaths in that city. The high death-rate which characterises the denizens of single-room dwellings is largely the result of the miserable conditions of the people themselves apart from the state of their dwellings. If they exchanged their one-room dwellings for four-room tenements, they would still have a high death-rate by reason of their poverty and its concomitant evils—and, alas, I fears from their intemperance. Wherever one-room dwellings can be obtained the poorest, idlest, and most intemperate classe, of the population will secure them; but, no matter where they live, their residences, unless under strict supervision, will be filthy and suffer from insanitary evils. In towns, at least, the vitality of the people will, in a general way, be directly proportional to their means of procuring the necessaries and comforts of life. (See the Table below.)

BACK-TO-BACK HOUSES.

Dr. Tatham, lately medical officer of health for Manchester, published some statistics which seemed to prove the insanitary character of houses which were built back-to-back without any intervening space. Dr. Bell of Bradford has also published statistics in reference to that town, which appeared to show that the people who lived in that kind of

Towns.	Of each 1000 tenements, the number consisting of				Of 100 tenements of four rooms or under, the number consisting of			
	1 room	2 rooms	3 rooms	4 rooms	1 room	2 rooms	3 rooms	4 rooms
Aston Manor	12	20	231	166	3	5	53	39
Barrow-in-Furness ...	15	129	95	100	4	39	28	29
Bath...	94	147	119	136	19	30	24	27
Birkenhead	53	77	60	198	14	20	15	51
Birmingham	14	43	369	156	2	7	64	27
Blackburn	3	24	16	596	1	4	3	92
Bolton	2	87	40	563	0·3	13	6	81
Bradford	25	185	308	196	3	26	44	27
Brighton	95	114	84	108	24	28	21	27
Bristol	89	153	130	123	18	31	26	25
Burnley	24	90	66	534	3	13	9	75
Bury	9	79	114	569	1	10	15	74
Cardiff	22	141	77	119	6	40	21	33
Coventry	8	123	135	214	2	26	28	44
Croydon	36	50	50	110	15	20	20	45
Derby	4	38	40	170	2	15	16	67
Devonport	252	295	167	90	31	27	21	11
Gateshead	102	370	231	153	12	43	27	18
Grimsby	8	33	27	248	3	10	9	78
Halifax	54	272	191	171	8	39	28	25
Hanley	1	34	34	263	0·3	10	10	80
Hastings	51	99	75	71	17	34	25	24
Huddersfield	50	206	269	185	7	29	38	26
Ipswich	18	53	28	156	7	21	11	61
Kingston-upon-Hull ...	24	87	120	341	4	15	21	60
Leeds	14	176	218	259	2	26	33	39
Leyton	27	39	103	156	8	12	32	48
Leicester	3	66	31	150	1	26	12	60
Liverpool	77	108	126	177	16	22	26	36
London	184	202	163	123	27	31	24	18
Manchester	15	97	52	390	3	18	9	70
Merthyr Tydvil	7	130	138	331	1	21	23	55
Middlesbrough	26	102	146	432	4	14	21	61
Newcastle-on-Tyne ...	132	304	208	146	17	38	26	19
Newport	21	143	89	99	6	41	25	28
Northampton	19	64	71	139	6	22	24	48
Norwich	21	79	85	155	6	23	25	46
Nottingham	9	35	130	146	3	11	40	46
Oldham	7	83	24	650	1	11	3	85
Plymouth	244	270	137	81	33	37	19	11
Portsmouth	40	75	60	102	14	27	22	37
Preston	5	27	53	374	1	6	12	81
Reading	11	33	42	103	6	18	22	54
Rochdale	18	213	102	397	3	29	14	54
St. Helens	9	87	72	427	2	15	12	71
Salford	23	104	39	390	4	19	7	70
Sheffield	6	67	239	248	1	12	43	44
South Shields	104	414	211	115	12	49	25	14
Southampton	62	91	67	125	18	26	19	37
Stockport	10	119	37	505	2	18	6	74
Sunderland	91	292	281	123	12	38	36	16
Swansea	27	131	73	282	5	27	15	53
Tottenham...	53	76	117	132	14	20	31	35
Walsall	5	63	80	361	1	12	16	71
Warrington	7	81	32	316	2	19	7	72
West Bromwich	5	101	194	388	1	15	28	56
West Ham	53	97	193	211	10	17	35	38
Wigan	6	174	112	400	1	25	16	58
Willesden	108	165	184	117	19	29	32	20
Wolverhampton	3	89	86	341	1	17	17	65
York...	28	98	69	258	6	22	15	57
Ystradyfodwg	9	142	134	122	2	35	33	30
62 towns (including London)	125	201	200	267	16	25	25	34
61 Provincial towns...	38	117	139	242	7	22	26	45

houses enjoyed better health than those whose dwellings had through ventilation. I think the recent interesting investigations of Mr. Herbert Jones have decided this question in favour of Dr. Tatham's views. He has compared the two classes of houses in Ripley and Saltaire, where the social status and other conditions of the inmates were identical. In Saltaire the annual general death-rate in a period of six years was 16·6, and the zymotic death-rate 1·08 in the through houses, whilst in the back-to-back houses the two rates were 21·1 and 1·7 respectively. The deaths from phthisis were in the ratio of 2·3 per 1000 of the population of the through houses to 3·4 in the back-to-back houses.

As these statistics apply to a population of more than 20 000, we may accept them as clearly proving the insanitary state of houses which have not a through ventilation. It is to be regretted that the local authorities still allow such houses to be built. In Dublin they could not be erected, there being a by-law directly prohibiting their construction.

THE HOUSING OF THE WORKING CLASSES ACT, 1890.

This important Statute has greatly stimulated the local authorities in reference to the clearing of unhealthy areas and the erection of dwellings for artisans and labourers. As such operations entail great expense on the ratepayers, the money devoted to them should be judiciously expended. The demolition of insanitary dwellings under the provisions of this Act is a costly proceeding, for undoubtedly more than their market value has to be given in compensation for them. It seems to me that houses unfit for human habitation might be more frequently dealt with under the provisions of the Public Health Act, and consequently without cost to the public. In Dublin 2700 houses have been detenanted and closed—about 1000 of them never to be reopened—without any compensation to the owners. If a man has a house unfit for a human dwelling, why should he be compensated for its disuse? We prevent a butcher from disposing of the carcase of an animal unfit for the food of man, but we do not compensate him for his loss. If a municipality be wealthy they could do no better work than the providing of good dwellings for artisans and labourers; but if their means are limited they should look only to the wants of the labouring and still poorer classes. In all towns there is a by no means inconsiderable proportion of the population who live from hand to mouth—who are often even in a state of semi-starvation. These unfortunates include old men and women still capable of doing a little work if they can get it; hawkers, the lowest class of porters, street vendors, widows with or without children, messengers, "sandwich-men," and other strugglers for existence. Then the mendicants, prostitutes of the lowest order, and the criminal classes must live somewhere, and we can easily imagine what their abodes must be. It is in the dwellings of the very lowest classes that the seeds of infective disease are nursed as if in a hotbed. These places are pest spots, and any amelioration of their condition must be a gain to society at large. With, perhaps, the exception of the utterly disreputable persons, it is for these people that healthful dwellings should be provided at very moderate rents. It has been alleged that the providing of model tenements at rents of 3*s.* 6*d.* per week and upwards causes the vacation of tenements, which must then be let at reduced rents to people poorer than the previous occupants. This may be the case, but certainly only to a limited extent. Artisans are a fairly independent class, and are well able to provide good dwellings for themselves; but the most dependent portion of the community ought to have the first claim on local authorities, and certainly upon the sympathy of men of the Lord Iveagh and Peabody type. The corporation of Dublin have been able to provide two-room tenements with separate sanitary accommodation of the most modern style at 2*s.* per week, and without loss to the city treasury. I can present no more striking description of the deplorable state of the houses of the lower classes than that given by Dr. Hope, medical officer of health for Liverpool, in the July number of *Public Health*. He says that 578 houses are about to be demolished. They consist each of three rooms, one over another and without any intermediate landing, so that the same atmosphere pervades the entire house. They are back to back and side to side, and their sanitary accommodation is outside and for common use. They have bulging walls, broken window sills, crumbling mortar, rotten woodwork, walls and ceiling stained by saturation with vapours of breath, and are foul-smelling. The death-rate in the three streets of insanitary houses was 63·1, 67·0, and 71 respectively.

WATER IN RELATION TO DISEASE.

The disuse of town wells and the filtration of public water supplies have done much to lessen the urban mortality. The filtration of water practically commenced only close to the middle of this century, and it is within this period that the great reduction in the death-rates of towns has taken place — a reduction not altogether due to improved water-supplies, but, I believe, largely from that cause. The value of filtration through mere sand has until recently been underestimated, but the researches of chemists and bacteriologists, more especially those of Percy Frankland, have shown that filtration through sand and gravel can be made almost as perfect as through charcoal. It has been demonstrated that a fresh sand filter acts merely mechanically and prevents the passage of the grosser particles; but a filter some time in use has its superficial layers permeated with a jelly-like mass of microbes which acts as the real filter. These microbes convert the nitrogen of the organic matter into nitrates, and they arrest the passage through the filters of other microbes. I believe that there are many persons in charge of filter beds who are not aware of these facts, and who do not know that new filters let microbes pass freely through them, that the sand layer should not be more than 30 centimetres in thickness, and that the rate of flow of water through the sand should be uniformly four inches per hour. The medical officers of health are not usually consulted about filtering beds, but it would be desirable that they should ascertain whether or not the new views with regard to them are known to the water-works officials. Wolffhügel found that the 3000 colonies per cubic centimetre in unfiltered Berlin water were reduced by filtration to 107, which, however, are 57 in excess of the number assigned by Koch to good water. In the Dublin pipe-water the number does not exceed 25. Dr. Percy Frankland states that sand particles averaging 0·06 in. in diameter allowed from 26 to 40 per cent. of bacteria to pass through, whilst sand grains averaging 0·006 in. permitted 14 per cent. to pass through. When very fine sand (silver silt) 5 ft. in depth was used 95 per cent. were retained. Garden soil and peat are perfectly efficacious filtering materials; but the water passes too slowly through them. I cannot avoid here passing a eulogium upon the magnificent treatise of Dr. and Mrs. Percy Frankland on the micro-organisms in water, which has just been published. Besides being a record of the admirable researches of the authors, it is a valuable epitome of the literature of this subject. Professor Koch has expressed very strong views as regards the inferiority of surface drainage to subsoil water for potable purposes. He considers natural filtration through layers of soil as more efficacious in removing organisms than any system of sand filtration. The process in the former case is slow and the amount of filtering material considerable. There is no doubt that the water of deep wells, though often excessively hard, and therefore not suitable for domestic purposes, generally contains the merest trace of organic matter and is practically free from microbes.

The great importance of water filtration was painfully demonstrated during the last epidemic of cholera at Hamburg. This city, Altona, which is close to it, and Wandsbeck, virtually a suburb of Hamburg, derive their water supplies from the Elbe and a lake. Dr. F. Reiche, resident physician to the General Hospital, who has published a very elaborate account of the epidemic, states that there were 17,972 cases and 7610 deaths. In Altona and Wandsbeck there were few cases. Hamburg derived its water from the Elbe, above the town, and it was not filtered. Altona used filtered water taken from the river below Hamburg, and Wandsbeck's supply was taken from a lake and filtered. Analysis proved the pollution of the Hamburg water and the purity of the supplies to the two other towns. Here, surely, we have a strong proof of what is termed water-borne cholera. It is, however, remarkable that Koch was unable to detect a single cholera bacillus in this highly-polluted water. Another remarkable point in connexion with this epidemic is that the water used by Altona contained the sewage of Hamburg, the second largest town in Germany. Can there be a more wonderful proof of the purifying power of proper filtration? At the same time one cannot help asking, is there anything to be gained by tracing what has been termed the "pedigree" of water? It is stated that a better opinion as to the purity of water can be formed by knowledge of its sources than by the results of its analysis. It seems inconceivable that any amount of filtration could make river water pure that contained the sewage of an enormous town. It must, however, be observed that Altona is situated on much higher ground than Hamburg, that it is not, like the latter, permeated with stagnant canals, and that it is a healthier town. It seems not unlikely that the deplorable insanitary condition of Hamburg was the principal cause of the ravages of cholera. The correspondent of THE LANCET, in the number of that journal of July 7th, 1894, described the condition of the purlieus as almost indescribably bad. Official statistics showed that the deaths in the population were influenced by their incomes. The upper classes, though they drank the polluted water, suffered but little. The fitness of a water for potable purposes is generally determined by its chemical, and rarely by its biological, examination. The chemists, as a rule, believe that their method is the surer one,

whilst the bacteriologists consider their process as the only really reliable one. The chemical analysis is much more cheaply obtained than the bacteriological one, if the latter be thoroughly carried out; therefore the general public will continue to have water chemically, rather than biologically, examined. It is, however, clear that both methods are desirable, and I have no doubt that at no distant date the water analyst will be able to carry out both processes, as, indeed, a few of them now do. We have not yet determined, in relation to chemical analysis, the line which divides a bad from a good water, nor do I believe that such a line can be drawn. One that contains very little organic matter may be dangerous to drink, whilst, on the contrary, water with a large amount of organic matter has been drunk with impunity for years. In the eleventh annual report of the Local Government Board an account is given of the failure to detect pollution in water; 0·05 gramme of typhoid dejection was added to a litre of pipe water, and half that quantity of the dejection to another litre of water. Both, together with unpolluted water, were analysed by distinguished chemists, who were aware of the nature of the articles submitted to them. In the unpolluted water the free ammonia was 0·0021 and the albuminoid ammonia 0·0075 grain per gallon, which quantities were raised to 0·0025 grain of free and 0·0095 grain of albuminoid ammonia in the least polluted water, and to 0·0027 grain of free and 0·0123 grain albuminoid ammonia in the more polluted water; thus, the addition of 0·5 gramme of typhoid dejection to a litre of water, or 1·7 grain per gallon, had almost no appreciable influence upon the composition of the water, which before and after pollution would be passed by the chemist as a good one. As only about 8 per cent. of typhoid dejection is solid matter, of which about 6 per cent. is soluble, the addition of one grain of typhoid excreta to a gallon of water would add only 0·06 grain of soluble matter to the liquid. It may be said, then, of what utility is water analysis if it passes as good a water to a gallon of which 1·7 grain of typhoid stool had been added? It is unfortunate that there is no accurate chemical method for determining the precise nature of the organic matter found. As a rule, the larger the percentage of nitrogen contained in the organic matter the more likely is it to have been derived from an animal source. Analysis certainly shows the amount of organic matter present, and although such matter is usually innocuous it is sometimes the reverse. The greater the amount of organic matter, or rather of albuminoid matter, the greater the chance that it may include infective substance. When we have a water with a very small amount of nitrogenous organic matter there is no likelihood that typhoid dejections will be present. Under the ordinary conditions affecting our water-supplies it is improbable that typhoid stools would be mixed with them as was done in the experiments just quoted. They are thrown into water-closets, privies, ashpits, manure heaps, the soil, ditches, rivers, &c. From all these media they may find their way into rivers or wells furnishing potable water, but with rare exceptions there must, under such circumstances, be large quantities of other kinds of organic matter associated with the typhoid excreta and carried with it into the water. In short, the passage of unmixed excreta into potable water must be a circumstance of rare occurrence. In the ordinary cases of pollution by typhoid or other dejecta the analysis of water proves its unfitness for use. Dr. R. Bruce Low, in a report to the Local Government Board, states that Penrith has a water-supply which chemical analysis shows to be pure, but which he is satisfied is liable to excremental pollution, likely to produce enteric fever and other maladies. The number of micro-organisms in water is regarded by most bacteriologists as a measure of its purity, regardless of its chemical composition. For example, Professor Leeds, of the United States, condemned a water which, in every chemical respect, was much superior to another which he passed as good, because the former contained a very much larger number of organisms than the latter. As minute doses of virulent poisons have no bad effect upon the animal economy, it is likely that very small numbers of pathogenic microbes or very small quantities of toxines and microzymes may also be impotent for evil. In the great centres of population it is not unlikely that the inhalation and swallowing of disease-producing micro-organisms is a common occurrence.[4] That they do not always produce disease is because the organism which takes in the micro-organism is strong enough to master the latter, or because a few individual microbes are unable to do much if any harm. Professor Ray Lankester says: "One typhoid bacillus passing into or even reaching the intestines would not be able to hold its ground."

The epidemic of enteric fever in the Tees Valley in 1890 and 1891, investigated by Dr. Barry of the Local Government Board, has been held to prove conclusively that this disease is propagated by water. On an area of 1103 square miles, with a population of about half a million, 1463 cases of the disease were reported. It was ascertained that 219,181 persons were supplied with the Tees water, whilst the remaining portion of the population drank water derived from other sources. Amongst the former, attacks of enteric fever were fifteen times more numerous than amongst the latter. Dr. Barry shows that the Tees is liable to extensive pollution, one town and about twenty villages discharging their sewage into it. Dr. Barry's conclusions have, of course, been questioned by the water companies, for the water had been subjected to sand filtration; and Dr. Mitchell of Castle Barnard and Dr. Creighton of Cambridge have controverted them. Dr. G. H. Ganett, in a pamphlet on the water of the Severn, says of the Tees outbreak that it may have been caused by some accidental fouling of the water; but that the whole of the water of the Tees was infected by typhoid bacilli, derived from a very small amount of possible pollution at a point nearly twenty miles above where the water was removed for drinking, as suggested, is an idea that cannot be entertained. The question as to the Tees Valley outbreak being really due to polluted river water came before the Commission appointed in January, 1892, to inquire into the quality and quantity of the water supplied to London. Mr. Wilson, who was examined as a witness, appeared to represent the Stockton and Middlesbrough Water Board. He pointed out that in a village of 162 houses no case of enteric fever had occurred during the outbreak, though the Tees water was used in all the houses; and, further, that before this village got a supply from the Tees it used to suffer greatly from the ravages of typhoid fever. Mr. Wilson challenged the accuracy of the statistics, which, he said, were got by three different methods—compulsory notification, voluntary notification, and by replies to Dr. Barry's question. Mr. Wilson attributed the prevalence of typhoid fever in the district to general insanitary conditions. This Water Commission sat a large number of times, from May 16th, 1892, to June 30th, 1893. It comprised Lord Balfour of Burleigh (chairman), a geologist, a chemist, three engineers, and a medical man devoted to statistics—all eminent in their respective professions. They examined ninety-two witnesses. In their report the commission state that the evidence produced before them proved that the pollutions to which the rivers Thames and Lea are subjected are very numerous and that filth is illegally and unnecessarily discharged into these rivers. They also state that the methods of filtration in use by the different water companies "differ enormously," and that some of them are quite inadequate. With admitted extensive pollution and defective filtration the surprising thing is that the commission report that the water as supplied to the consumer "is of a very high standard of excellence and purity." They do not believe that any danger exists of the spread of disease, provided, however, that the water is properly filtered. The medical and statistical evidence submitted to the commission proved that London had a comparatively low typhoid fever death-rate, and that outbreaks of this disease, or even solitary cases, were not clearly attributable to the use of the London pipe-water. So far as my observation of the London tenement houses goes, it seems extraordinary how their inmates escape enteric fever if water be the usual vehicle of its poison. An intermittent water-supply, with storage cisterns placed on the roofs of waterclosets in small, close yards, is a common state of things in thousands of tenement, and, indeed, in other kinds of, houses. There seems to be no evidence that the bacilli of typhoid fever find their way into these cisterns, notwithstanding that they are exposed to foul emanations and are often uncovered; there may be other diseases caused by the water in some of those exposed cisterns. In many towns supplied with well-filtered water complaints are made that it is occasionally impure. Dr. Victor Despeignes states that the water at Lyons, though filtered under good conditions, when it arrives at the taps contains so many bacilli as to constitute it a danger to health. Cisterns are the cause of much pollution of water, and therefore, if possible, they should not be used.

(To be continued.)

[4] Dr. W. D. Miller, of Berlin, discovered thirty-one different pathogenic organisms in the mouth, and Professor Leeds found per cubic centimetre of his own saliva six hours after taking food 10,775 colonies of bacteria. Peroxide of hydrogen and solution of saccharine are excellent disinfective washes for the mouth.

THE INDICATIONS FOR THE INDUCTION OF PREMATURE LABOUR.[1]

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THE induction of labour under just indications marks the progress of medical science, and is one of the most brilliant examples of conservative surgery. These characters must always command the earnest attention of the obstetric surgeon. And hardly less forcibly do they challenge the attention of all physicians on account of the light which they throw upon general pathology. The application of the proceeding is one leading expression of the state of obstetric science. Therefore, as science advances, the necessity for revising the conditions under which this proceeding should be resorted to is ever recurring. This consideration proves the wisdom of those who selected this topic for discussion at the meeting of the British Medical Association.

When seeking to determine the indications for bringing pregnancy to an end, the first source of light will rightly be sought in the observation of the conditions under which nature herself seeks relief by adopting this course, and the evils incurred if this mode of relief or escape be missed. *Natura ostendit viam.* Our search for guidance towards the solution of the problem before us must then be determined by the steady observation of the physiology of gestation and of the pathological accidents emanating from or associated with it. The history of reproduction is marked by four distinct epochs: (1) gestation, (2) parturition, (3) puerpery, and (4) lactation. The strict scope of our inquiry is comprised within the first three epochs. The question of shortening the duration of pregnancy can rarely arise in the cases of women who have simply proved unequal to the task of lactation. But when women who, through some fault of structure or constitutional defect, have struggled through parturition and puerpery with serious difficulty, threatening life, become pregnant again, the question whether it be possible to lessen the dangers attending these processes at the natural term by terminating the gestation at a chosen time is a fair subject for consideration. The question, indeed, sometimes forces itself whether it be not the more prudent course to avoid pregnancy altogether; but this is simply evasion of the difficulty by prohibition. Preventive medicine has not achieved this degree of authority. We cannot, however, evade the call to act upon the indications so frequently given by the observation of the accidents arising during pregnancy and puerpery. The indications spring from the study of the conditions which imperil the safety of the mother, of the embryo, or of both. In accordance with the law generally accepted in this country the safety of the mother is the first claim; that of the child is a secondary consideration. Sometimes—indeed frequently—the two interests run together; they do not conflict. The course best calculated to preserve one is also the best for, or is at least compatible with, the preservation of the other; and with the advance of science the occasions on which the necessity of condemning one or the other have become less frequent. Thus the advance of science brings us more and more in accord with the law of nature.

It would be difficult to state a problem in practical medicine more widely interesting than this of demonstrating the conditions which indicate the propriety of inducing labour. The physiological and pathological factors which have to be studied and weighed in the search for a solution are many. And there yet lingers a prejudice of mistaken morality, which, ignoring the law that true medicine is based upon the right appreciation of physiology and pathology, further complicates the question. The obvious duty of the physician when he sees a pregnant woman in difficulty is to consider and determine how to secure the safety of both mother and child. There is no parallel problem in the range of medicine. The ordinary physician has to deal with one subject. Whether it be due to this circumstance or to his defective understanding of the physiology of gestation, he is apt to concentrate his attention upon the mother; he fails to recognise the inter-dependence and correlation of the two beings. So, for example, in the case of a pregnant woman suffering from albuminuria, his attention is engrossed by this phenomenon, and he directs his treatment accordingly. His conduct is ruled by the specious and ignorant dictum: "Treat the disease, and let the pregnancy take care of itself." This simply means: "Treat the symptoms, and let the cause continue to act." It is needless to point out to those who study the physiology of pregnancy that this course imperils both mother and embryo.

Our theme does not embrace the cases in which interference with the course of gestation is indicated by mechanical obstructions to the process of labour; but one remark pertinent to this subject is not inappropriate. In the case of mechanical difficulty the question for decision may lie between embryotomy and the Cæsarean section, or the sacrifice of the embryo by inducing labour before the term of viability is reached. This question is one of growing interest, as the advance of abdominal surgery is rapidly tending to minimise the resort to sacrificial operations. Here, then, we find further confirmation of the law that obstetric practice becomes every day more conservative. The day is at hand when the Cæsarean section will greatly, if not quite, supplant embryotomy. We may, therefore, pass on to the study of those constitutional conditions which so overtax the powers of the system as to threaten life directly, or to lay the foundation of organic changes of structure which may lead to permanent disease. The theme so stated leads us to follow the survey of the conditions which threaten death or disease by the study of the means resorted to with the view of averting these calamities, and their relative efficacy. These means may be classed under the three heads: (1) general; (2) medical; and (3) surgical. The solution of the problem depends primarily upon a right appreciation of the forces brought into action under the influence of pregnancy; then we must observe the disturbing factors, watch how nature succeeds or fails in the struggle to preserve physiological balance; and then, by combined physiological observation and clinical experience, we may arrive at certain definite indications for medical and surgical intervention.

Let us then, in the first place, observe the phenomena evoked by pregnancy. The most remarkable are the marvellous exaltation of nervous and vascular tension and attending alterations in the qualities and quantity of the blood. From the moment that the embryo takes possession of the woman every organ, every fibre, is affected; the entire system is working under high pressure. It is our business to watch narrowly to see how far she is able to bear the strain, and to be prepared with means to help her in preserving or in restoring the just equilibrium. Failing in that, then we must endeavour to relieve the overstrained organism by removing the cause of the disturbance—that is, to remove the embryo by the induction of labour. At the outset of the discussion we must recognise the fact that the struggle is at first strictly physiological. So long as we can help nature to preserve her physiological predominance, we may pursue a policy of expectancy, keeping a vigilant watch over the patient, testing the capacity of each organ to fulfil its proper function, helping her, as we sometimes may, to relieve one organ or more, by invoking other organs to do supplementary duty, and so to maintain the integral work of the system. We must be careful not to be deluded into pursuing the policy of expectancy too far. The transition from physiology to pathology is often sudden or insidious. Judicious action during the reign of physiology may prevent disease. The reign of pathology once started, we are reduced to palliative treatment in the hope of cure. The strictly medical treatment of the difficulties that complicate pregnancy is often delusive. We must not defer too long appeal to the decisive intervention of surgery.

Let us begin with the conditions attending excessive nervous tension. One of the first evidences of high nervous tension is vomiting. This we know commonly sets in early in pregnancy. It is a healthy physiological regulating function, essentially conservative, letting off excessive tension and maintaining the equilibrium. It acts as a safety-valve. But it is a fact to be borne in mind that all convulsive affections, and vomiting is really a form of convulsion, tend to acquire force by repetition. Every attack or fit of convulsion of whatever kind renders the nervous centres more responsive to exciting factors; and so the habit of convulsion is formed, the diastaltic proclivity becomes more predominant; and repeated attacks may lead to organic change of structure—

[1] Paper read before the British Medical Association, at Bristol, Wednesday, Aug. 1st.

that is, to permanent disease. Every fit increases the irritability of the nervous centres and oppresses the brain. Every fit acts as a shock. Diarrhœa is not uncommon, supplying further evidence of toxæmia. Vomiting is most severe when it sets in with severe mental shock or distress, when there is gloomy depression passing into despondency. Such cases may run rapidly to a fatal issue, resisting all treatment, even the induction of abortion. Toxæmia soon complicates the case, even when the embryo lives. First there is starvation, giving strong impetus to the process of absorption; secondly, no adequate nutrition being supplied from without, the system feeds upon itself. There is a rapid disintegration of all the tissues, most marked in the fat tissue. So the blood is degraded and empoisoned; uræmia often enters as a factor. Nervous energy is diverted from its natural destination; it is exhausted in destructive morbid action. Irritative fever, with delirium, sets in. At this point labour, whether it occur spontaneously, as it often does, or be induced artificially, comes too late. Death soon follows delivery. Violent vomiting may also throw excessive strain upon the heart and brain. How can we keep vomiting within the useful physiological bounds? We cannot here stop to consider this question. When vomiting is associated with or depending upon marked functional or structural disease of organs the condition is especially serious. A striking example of this is seen in cholæmic vomiting connected with acute atrophy of the liver. The indications of danger are extreme emaciation; pulse small, easily put out, over 130; hollow, staring eyes; Hippocratic aspect, delirium; and especially if there be albuminuria. There is a special group of cases in which vomiting becomes obstinate in the latter stages of gestation owing to excessive, rapid distension of the uterus from undue secretion of liquor amnii, the development of twins, or diseased ovum or placenta. In such cases the indication to induce labour is most clear in the interest of both mother and child.

From vomiting, the most simple form of convulsion, we may pass on to the severer and more commonly pathological forms. Of all the forms of convulsion that come before us, those in which albuminuria is an efficient factor leave the least room for doubt. This form, eclampsia, calls for prompt decision. The danger is twofold: (1) imminent danger to life; and (2) life being saved, the highly probable danger of permanent disease of the kidneys. Tetanus, not often seen in this country, is a strong indication for the induction of labour. Chorea and epilepsy occurring in pregnancy are presumptive evidence of latent disease of the nervous centres started in early life and evoked into activity under the excitement of gestation. Observation has led me to the conclusion that in such cases the pregnancy should be ended. The general rule may be formulated that we must not allow convulsive disorders to persist. Chorea, when evoked by gestation, assumes especial gravity and is likely to culminate in insanity. Insanity has an important bearing upon the problem before us. The convulsive disorders already noted are evidences mainly of diastaltic disorder—that is, more especially of disease or disorder of the spinal column. We cannot, indeed, exclude the concurrent implication of the brain and cerebellum; and in this connexion I may venture to offer a reflection which has often struck me when nervous phenomena of pregnant women have been under observation. The strange emotional proclivities arising under the influence of gestation suggest a resemblance to convulsion. They may be looked upon as a form of cerebral or mental convulsion; the factors in the process being (1) high tension of the cerebral centre, (2) intra-uterine or other peripheral or external irritation, and (3) diastaltic response in the form of emotional convulsion. Observation of the phenomena of hysteria suggests a similar explanation. Certainly hysteria is allied to convulsion.

It is further to be noted that marked emotional proclivities, even when not certainly associated with structural changes, not seldom lead to insanity. Such cases are almost certainly aggravated by pregnancy. Hence the indication to terminate the pregnancy is strong. I have seen mania quickly vanish on the arrest of gestation; but the question is too vast to be settled by a few observations. Savage speaks emphatically against the induction of labour. He says it will almost certainly convert a case of insanity of pregnancy into a case of puerperal insanity.

We may now pass under rapid review the dangers of high vascular tension with ultra-physiological changes in the characters and quantity of the blood; nature's methods of relief, and the consequent therapeutical measures indicated. The double duty thrown upon the heart to drive arterial blood enough to nourish two organisms, implying, as it does, an increased volume of blood, is only to be accomplished by increase of arterial tension. This is demonstrated by quickened pulse and the indication given by the sphygmograph. This pressure is essentially eccentric or towards the periphery. This pressure when excessive is at times relieved by external hæmorrhages, as by epistaxis, hæmatemesis, hæmoptysis, intestinal as from hæmorrhoids, or from the vagina. If relief is not found by external hæmorrhage there is danger of internal hæmorrhages, as apoplexy. Another mode of relief is by peripheral serous effusions. In every pregnancy I believe there is some amount of serous effusion in the cellular tissue of the pelvis. Not seldom there is effusion in the cellular tissue of the body and limbs, and in the necropsies of pregnant women which I have seen there was found diffuse serous effusion in the brain. Then there is some relief gained by excessive excretion of liquor amnii. I need not do more than mention the ordinary physiological relief gained by transudation from the skin, lungs, kidneys, and intestines. This function is exaggerated during pregnancy. Another source of relief is found in the quantity of watery fluid thrown off by vomiting. Thus vomiting relieves both nervous and vascular tension. Then, again, nature struggles to relieve herself by dropsical effusions into the serous cavities. Some of these efforts at relief overstep the physiological boundary, and danger is imminent. It is sometimes averted by the occurrence of abortion or premature labour. No function can be efficiently carried out when the whole system is waterlogged. What are the indications thus given? May we not take a lesson from nature and purge or give emetics, as hot water. Venesection is sometimes strongly indicated, as when hæmorrhages occur, and when there is undue pressure upon the kidneys, in Mahomed's pre-albuminuric stage, or in the early stages of albuminuria with convulsion. Venesection is out of date, but I have practised it with the best results. Then in last resource we follow nature's most decisive action in her rebellion against pregnancy by inducing labour. Extreme anæmia, especially the pernicious form, may also indicate recourse to induction of labour. The hyperinotic quality of the blood in pregnancy is a source of danger. Under ordinary conditions the excess of fibrin is no more than physiology can deal with; but when under strong emotion the circulation is brought under physical disorder or arrest the fibrin may clot in an artery, plug it, and cause gangrene if it be in a limb, or fatal apoplexy if in the brain. I have seen both. Another cause of clotting or embolism is more frequent—that is, some toxic element penetrating into the blood or formed in it may cause coagulation. Of such events we rarely have warning to guide action; but we must remember that there is an underlying common condition acting in all these nervous and vascular disorders; and that the direction or the form in which trouble may issue depends upon accidental factors.

The question of inducing labour arises when a woman suffering from a grave constitutional or organic disease becomes pregnant. We have to consider what effect the pregnancy may exert upon the disease, and *vice versâ*. Take the case of phthisis. The idea was once prevalent that the progress of phthisis was checked by gestation; and there is a popular belief that pregnancy will cure other diseases. This belief is one expression of the old theory of derivation of diseased action by setting up a new action in another part. It is based upon the hypothesis, not altogether unfounded, that two morbid actions cannot coexist; but that a second morbid factor engrafted on an existing one will divert the forces that sustained it. But it is more in accordance with clinical experience that concurrent diseases aggravate each other. No doubt the performance of this natural function is, on the whole, beneficial; but observation convinces me that the argument as applied to phthisis is erroneous. The additional strain thrown upon the heart and lungs can hardly act beneficially. In cases which I have seen the subject has struggled through pregnancy more or less successfully; but the crisis came with labour and puerpery, when the breakdown was rapid and fatal. Wanting the free action of the lungs in aid of the processes of absorption, metabolism, and elimination, the system is overpowered. Pregnancy is less trying to the phthisical patient than labour and childbed. The puerperal process throws such an increase of work upon the circulation that the system often breaks down at this period.

Still, the question of inducing labour is an anxious and difficult one. Can we prolong life or moderate the progress of the disease by shortening gestation? Even if gestation be prematurely ended, will the strain of puerpery be less severe, will the progress of the disease be checked? This must in many cases be doubtful. Nature sometimes decides the question by abortion or premature labour. The question is one specially deserving of attention. Looking at the culminating danger of puerpery, it may be desirable in the interest of the mother as well as of the child to postpone labour as long as possible. And we should not forget that the prognosis of phthisis is often open to fallacy. Valvular disease of the heart, fatty degeneration, aneurysm of the aorta, are perilous conditions. A catastrophe may occur at any moment under any accidental impetus to the ordinary arterial pressure. I have related in the "System of Obstetrics" the case of a young woman which I saw at the Paris Clinique d'Accouchements who died suddenly from the rupture of an aneurysm of the aorta under the strain of defecation. I think that where disease of the heart exists we should carefully watch and be prepared to induce labour when signs of distress are marked. When tumours of the uterus exist it is generally unsafe to let gestation go on. The danger of hæmorrhage, rupture, and sphacelus of the uterus when labour occurs at term or even late is very great. Another complication raising the question is that of plural gestation. Nature commonly decides for herself in such cases. And the symptoms generally indicate this course to the surgeon.

The history of repeated pregnancies ending prematurely or at term in the birth of a dead child obviously suggests the question of bringing on labour whilst the child is alive. Disease of the placenta is due perhaps to syphilitic or tuberculous diathesis, and fatty degeneration, especially if recurrent, points to the expediency of anticipating the loss of the child by inducing labour. In such cases the interest of the mother also is observed. Carrying a dead child is not free from danger. Diseases arising during gestation often start the question of the expediency of inducing labour. The zymotic fevers, as scarlet fever, typhoid fever, and small-pox, may run their course without interrupting pregnancy. Sometimes, however, abortion takes place. In the case of scarlet fever especially, of itself a frequent cause of albuminuria and kidney disease, we should watch carefully for the first indication of albuminuria, and be prepared to induce labour before organic changes have time to arise. I have induced labour, saving mother and child, in a severe case of pneumonia. When contemplating the induction of labour or abortion we must carefully weigh one strong reason for temporising—that is, the preservation of the child. This points, of course, to the expediency of delay until the period of viability is attained. But our first care is not to risk the safety of the mother. Not only is her claim pre-eminent, but the safety of the child almost certainly hangs upon that of the mother. In determining upon the propriety of inducing labour we must not forget that much depends upon the mode of carrying out the proceeding. This is eminently important when the motive of action is nervous complication, as convulsion. *Accouchement forcé* by the old methods is not only bad but unnecessary. As I have shown, the induction of labour at a predetermined hour by safe and gentle means is quite within our power. By taking the whole conduct of labour into our own hands, watching it throughout, we are prepared to meet any emergency. By adopting the methods I have demonstrated we may greatly extend the application of this most beneficent and conservative operation. Upon this subject, however, I need not dwell. The rule urged by Denman not to undertake the induction of abortion or labour without a formal and deliberate consultation is imperative. When we reflect upon the many and grave medical, legal, and moral points involved in the arbitrary interruption of gestation, we shall find abundant reasons for seeking counsel to avoid possible clinical error and for sharing serious professional and social responsibility. In this way the physician will set the question in all its gravity before those who consult him. He will show that a step so important can only be justified on the strict rules of medical science, and that these rules are in harmony with the law of right.

Now I am sure you will agree with me that it is time to end this imperfect statement of a difficult and complicated problem. Full exposition would carry me through a wide range of the field of disease. I am, however, conscious that I have said enough to challenge ample criticism and discussion.

NOTE ON NINE HUNDRED AND TWENTY-FIVE EXTRACTIONS OF CATARACT.

BY CHARLES HIGGENS, F.R.C.S. ENG.,
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WHEN I commenced preparing this paper I intended to write my experience of 1000 operations; but, though I have extracted cataract from over 1100 eyes, I find there are some 200 of which I have no notes. I have, therefore, contented myself with those cases of which I have more or less full details. Four hundred and sixty of the cases have already been published in three separate papers. My first paper was read before the Royal Medical and Chirurgical Society in 1879 and referred to 150 operations performed between April, 1875, and May, 1878. My second paper was communicated to the Ophthalmological Society in 1884 and gave the details of 200 extractions performed between May, 1878, and February, 1883. My third paper was in the form of a communication to THE LANCET, Nov. 11th, 1893, and gave my experience of 110 extractions performed between May, 1891, and May, 1893, 52 being done without iridectomy and 58 with. I now add to these the notes of 465 operations performed between February, 1883, and May, 1891, and from May, 1893, to May, 1894. In the notes referring to the latter period I have, as in my communication to THE LANCET, compared the non-iridectomy and iridectomy cases together. In estimating results, vision $\frac{6}{9}$ and ability to read Jaeger types 16 or Snellen's 4 or better, are considered successful; Jaeger 19 or 20, counting fingers, or seeing to get about, partially successful; no improvement or worse vision than before operation as failure. The results of my first 150 cases, published in vol. lxii. of the Transactions of the Royal Medical and Chirurgical Society, were: successful, 76·6 per cent.; partially successful, 16 per cent.; failures, 7·3 per cent. Of the 200 cases published in the Transactions of the Ophthalmological Society, vol. iv.: successful, 87·5 per cent.; partially successful, 4·5 per cent.; failures, 8 per cent. In the third series of cases[1] the results of the non-iridectomy cases were: successful, 88·4 per cent.; partially successful, 7·6 per cent.; failures, 1·9 per cent.; not recorded, 1 case. Of the iridectomy cases: successful, 68·9 per cent.; partially successful, 18·9 per cent.; failures, 3·4 per cent.; not recorded, 5 cases. The results, however, show nothing in favour of the non-iridectomy operation as against that associated with iridectomy, as the non-iridectomy cases were all picked. Of the 465 cataracts extracted since February, 1883, 437 were nuclear, 21 cortical, and 7 traumatic. Extraction was performed by a small flap section upwards (with a few exceptions where the section was made downwards or in some oblique direction), associated with iridectomy, performed either simultaneously or as a preliminary some weeks or months before the removal of the cataract, in all but 39 eyes, which were operated on by a small flap section upwards without iridectomy. I used to do preliminary iridectomy in most cases of immature cataract when I performed all my operations under anæsthetics; it saved time and facilitated the removal of the cortex when the extraction was performed, and also lessened the risk of iritis; but since I have operated almost entirely under cocaine I have given it up, as any amount of time may be spent over the operation, and the cortical matter can be much more satisfactorily dealt with. My method of operating is now (and has been for many years past) to hold the upper lid away with the end of the ring finger, fix the eyeball below the horizontal meridian of the cornea, and make the forceps keep the lower lid out of the way (I rarely use a speculum). I make my incision with a Graefe's knife, by puncture and counter-puncture in the sclero-corneal margin, cut in the sclero-corneal margin to near its upper part, but finish the section rather within the corneal border. If I am going to do iridectomy, before commencing the incision I pass a suture through the conjunctiva below the margin of the cornea and leave it hanging on the patient's cheek; then, if I want the eye drawn downwards, I tell the patient to look down, draw the suture moderately tight, and get an assistant to put his finger on it, and so the eye is kept fixed in the desired position without being touched with forceps, and the silk thread acts as a speculum to the lower lid. I keep the

[1] THE LANCET, Nov. 11th, 1893.

upper lid out of the way with a finger of the hand which holds the iris forceps. I remove the cataract by pressure through the lower lid with my fingers, or directly upon the eyeball with the curette.

The results of the 465 operations were 351 (75·2 per cent.) successful; 44 (9·4 per cent.) partially successful; 33 (7 per cent.) failures; and 37 cases the results of which are not recorded; these 37 cases would probably go in about equal proportions to swell the successful and partially successful lists. I do not think any of them would be recorded as failures; the failures always occur before the patients pass from observation. The non-recorded cases are those which should have returned for glasses or further treatment and failed to do so. Secondary operations, needling opaque capsule, tearing through dense opaque membranes with sharp hooks, iridectomy, and iridotomy were required in 134 eyes: this does not give the whole number of operations, as several eyes were operated on more than once, some four or five times. Vitreous was lost in 14 cases. A traction instrument (Taylor's loop or a sharp hook) was used for removal of the lens in 22 cases. In 1887 I removed some few cataracts in the capsule with the loop, without attempting to extract them in the ordinary way, with good results, but its use seemed to me unnecessary; as a rule the loop or hook was only used in traumatic extracted with associated iridectomy, the results are as follows:—Non-iridectomy cases: successful, 31; partially successful, 4; failures, 2; result not recorded, 2. Iridectomy cases: successful, 24; partially successful, 3; failures, 3; not recorded, 5. The secondary operations required were 6 in the non-iridectomy cases and 12 in the iridectomy cases, so that it would appear that iritis sufficient to cause capsular obstruction is much more common when iridectomy is performed than when it is not. On looking through the tables I have prepared I find there are many points of interest, but even to mention them all would make this paper much too long; but I may call attention to a few of them. Taking the results of the three larger series, the percentage of failures varies but little, being 7·3 per cent., 8 per cent., and 7 per cent. respectively; but there is a great difference in the relative number of successes to partial successes, especially between the first and second series. This, I think, is due to the time at which the final notes of the cases were made, more care having been taken to see that the final result after all secondary operations had been performed were recorded in one series than in the other.

In January, 1885, I first commenced to use antiseptics, and their influence upon the number of failures is most marked. There is, however, a source of fallacy, and the whole of the improvement must not be put down to their use exclusively for a month later; in February, 1885, I commenced to use cocaine, not at first in by any means all the cases I operated on, but occasionally. I did not believe in its anæsthetic properties: when I had convinced myself on that score I thought it was too good to be true, and always expected disaster to follow its use sooner or later; but the disaster has not come yet. I had one case in 1885 in which, I believe, cocaine was responsible for the loss of an eye. It had been used too long, and the cornea had become steamy from its effects when I operated. Suppuration commenced the day after the operation, but that is the only case in which I have the least suspicion that cocaine did any harm. I have used solutions of 2, 5, and 10 per cent., but now have settled down to 5 per cent. The difference in my results since January, 1885, whether due to antiseptics or to cocaine, or a combination of the two, is that of 334 cases, not counting those that formed the subject of my paper in THE LANCET of Nov. 11th, 1893, the failures have been 4·2 per cent., against 7 per cent. in the whole series of 465 operations, and against 14 per cent. in the first 131 cases operated upon in the years 1883-84. In these two years I find 8 failures out of 33 cases, and again, some months later, a series of 26 cases with 6 failures.

TABLE OF NINETEEN CASES OF EXTRACTION OF CATARACT IN PERSONS OF EIGHTY YEARS OF AGE AND UPWARDS

No.	Sex.	Age.	Form of cataract.	Operation.	Result.*	Remarks.
1	M.	80	Nuclear.	Small flap; downwards preliminary iridectomy.	J. 20	Much opaque capsule; old corneal opacity; no note as to secondary operation.
2	F.	80	,,	Small flap; downwards iridectomy.	J. 8, $\frac{6}{9}$	—
3	F.	80	,,	Small flap; upwards iridectomy.	Stitches in wristband.	—
4	F.	83	,,	Small flap; upwards iridectomy.	J. 10, $\frac{6}{9}$	—
5	F.	85	,,	Small flap; upwards iridectomy.	J. 8, $\frac{6}{9}$	Needle operation for opaque capsule.
6	M.	80	,,	Small flap; upwards iridectomy.	J. 1, $\frac{6}{9}$	—
7	F.	83	,,	Small flap; upwards iridectomy.	Stitches in wristband.	—
8	M.	84	,,	Small flap; upwards iridectomy.	J. 4, $\frac{6}{9}$	—
9	M.	85	,,	Small flap; upwards iridectomy.	J. 1, $\frac{6}{9}$	Needle operation for opaque capsule.
10	F.	85	,,	Small flap; upwards iridectomy.	J. 1, $\frac{6}{9}$	—
11	M.	80	,,	Oblique corneal section; no iridectomy.	J. 1, $\frac{6}{9}$	—
12	M.	86	,,	Small flap; upwards iridectomy.	J. 1, $\frac{6}{12}$	—
13	M.	80	,,	Small flap; downwards iridectomy.	J. 4, $\frac{6}{12}$	—
14	F.	82	,,	Small flap; upwards iridectomy.	J. 1, $\frac{6}{12}$	—
15	M.	81	,,	Small flap upwards; no iridectomy.	J. 6, $\frac{6}{9}$	Severe iritis; much opaque capsule; needle operation.
16	M.	83	,,	Small flap upwards; no iridectomy.	J. 10	Needle operation required.
17	M.	80	,,	Small flap upwards; iridectomy.	J. 6, $\frac{6}{9}$	—
18	F.	80	,,	Small flap upwards; iridectomy.	J. 12	Capsule washed out.
19	M.	83	,,	Small flap upwards; iridectomy.	Eye lost	Severe iritis; entropion of lower lid; operated on; sympathetic iritis; still under treatment.

* The "J." in this column stands for "Jaeger." The number represents that of the Jaeger type that could be read. The fractions $\frac{6}{9}$, &c., express the acuteness of vision for distance. "Stitches in wristband" means that the patient could not read, and stitches were used as a test instead of letters. In all cases a suitable convex lens was used.

cases where there was difficulty in pressing out the lens. In 11 cases the capsule was washed out with boiled water, with excellent results; I consider this a very valuable proceeding in cases where much cortex remains behind and cannot be pressed out in the ordinary way. In one case of traumatic cataract, where a piece of steel had been removed from the lens by the electro-magnet, the lens matter was so sticky and mixed up with lymph that its removal by pressure was quite impossible. I washed it out with boracic acid lotion; no iritis followed; the eye recovered with circular central pupil and vision $\frac{6}{6}$ with + 12 D and Jaeger 2 with + 15 D. Of the 33 failures suppuration of the cornea or panophthalmitis was responsible for 16 cases; severe iritis or choroido-iritis for 12; and hæmorrhage into the eyeball consequent on vomiting for 2 cases. The cause in the other three cases is not recorded, but they were probably blind eyes in which the lens was removed for appearance sake. Amongst the failures are three cases in which the second eye was lost from sympathetic ophthalmia. I have not included the eye not operated on in my list of lost eyes.

With regard to the non-iridectomy operations performed since May, 1893, of which there are 36 nuclear, 2 cortical, and 1 traumatic, as against 30 nuclear, 4 cortical, and 1

The probability is that at these two particular periods the ward was, from some cause or other, in an unusually septic condition. If I add the 110 cases reported in THE LANCET, the percentage of loss of the whole 444 eyes operated on since I commenced to use antiseptics is 3·8 per cent.

A good deal of interest has lately been taken in a case of operation for cataract in advanced age. Success in such cases is by no means uncommon, as shown in the table on the preceding page, which gives the results of my operations on persons of eighty years of age and upwards; they are nineteen in number, and it will be seen that in all but two the results were entirely successful; in one of these success was partial. The single failure, however, was disastrous; it was one of those already mentioned, in which the second eye was lost from sympathetic ophthalmia.

Brook-street, W.

CASES OF ASTHMA AT THE CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, VICTORIA PARK.

BY J. C. THOROWGOOD, M.D. LOND., &c.,

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CASE 1. *Asthma arising from bronchitis; relief from local treatment of the nasal passage.*—A young woman twenty-three years of age came into the City of London Hospital for Diseases of the Chest, Victoria-park, in October, 1893. She had always had good health until she got influenza in February, 1890. This was followed by bronchitis, which kept on and off for three months. Gradually attacks of spasm in her breathing came on at night, and she had one of these seizures nearly every night. When admitted to the hospital the following notes were taken by Dr. Head, the house physician: "The patient's face is pale; there is no œdema of the feet; the respiration is 28, with audible wheezing in expiration and inspiration; the breathing is very short, and she cannot walk without some assistance; there is great desire for deeper inspiration; the chest is fully resonant, with musical rhonchi and prolonged expiration; the pulse is 104, regular; the cardiac action is normal; the digestion is good; the liver dulness is diminished; sputum scanty, free from tubercle bacilli, but Dr. Fyffe found large numbers of diplococci." The temperature was observed at times to rise to 102° F.; the urine was normal; the sense of smell was diminished; the hearing and eyesight were good. Believing from the history, increase of temperature, and physical signs that the case was one of bronchitic asthma, I prescribed for her a mixture with ipecacuanha wine, hypophosphite of potash, and conium, and this was taken for a week, at the end of which time there seemed no notable change in her condition. One of her attacks of dyspnœa is thus described by Dr. Head: "At 11.30 P.M. she was found leaning forward, with blueness of lips and face; the pulse was 160; the inspiration was short and catching, the expiration prolonged. The abdominal muscles were acting powerfully for expiration; the upper part of the thorax was drawn up in inspiration by the muscles of the neck." There was evidently more of spasm and reflex irritation about these seizures than anything of an inflammatory nature, and the attack just described was speedily relieved by causing her to inhale the fumes of the compound nitre powder of the Victoria-park Hospital Pharmacopœia. As she inhaled, inspiration became deep and prolonged, and all abdominal straining ceased. Measurement showed that the upper chest was distended during the paroxysm. Another similar attack on Oct. 31st was soon dispersed by spraying the nostrils and pharynx with a 5 per cent. solution of cocaine. In two minutes she found relief. Cough with mucous expectoration followed. The nasal passages being obviously much obstructed, we got Mr. Mark Hovell to be kind enough to examine her at the London Hospital on Dec. 2nd. He found much vascular and hypertrophied tissue over the turbinate bones of the nose, and when this was removed she was able to breathe with comfort; the asthmatic attacks were less frequent and severe, and for a time ceased entirely. Among various remedies tried, none did more good than iodide of potassium with ammonium carbonate, of each five grains, in camphor water. Powders of citrate of caffeine (two grains) were of service in relieving the immediate attack. The patient left the hospital much improved, but still liable at times to asthmatic seizures. The case is typical of many met with in practice, where a persistence of bronchial catarrh leads ultimately to the development of asthma. When the asthma thus comes on it is usually found associated with nasal congestion and obstruction from hypertrophied vascular tissue over the turbinate bones. The importance of local treatment becomes then essential for the cure of the case.

Hay asthma is very often antedated by catarrhal symptoms, which may distress the patient every summer for a year or two before a true asthma is produced; then, with the asthma, nasal obstruction becomes increasingly evident as a symptom, and it is now that so much relief is obtained from the destruction or removal of the overgrown tissue, for thus is destroyed the reflex centre from which the asthma maintains its hold over the patient.

The following case is of interest as illustrating the beneficial effect of the decoction of euphorbia pilulifera in asthma with possible tubercle.

CASE 2.—A man thirty-three years of age was admitted into the City of London Hospital for Diseases of the Chest, on May 21st, 1894, as a case of asthma and tuberculosis. He had for about four years been subject to attacks of asthma coming on sometimes by day and sometimes at night. The season of the year had no influence over his seizures. At Yarmouth he had some bad attacks, while at Blackpool and Fleetwood he had none. Two years ago he had some hæmoptysis. Of late he had lost flesh, but had no look of wasting in his appearance. The temperature was normal during the whole of his stay in the hospital. The pulse was 96. The digestion was good, and the urine in all respects normal. The chest was well covered, and the expansion good; the respiratory murmur was weak, specially so under the right clavicle; there was no wheezing sound. At the right supra-spinous fossa a few clicking sounds were indistinctly audible. On June 1st, 1894, the patient suffered from slight hæmoptysis. Dr. Walsham reported a very few bacilli in the sputum. On May 26th the patient had commenced taking one ounce of the decoction of euphorbia pilulifera three times a day with ten minims of spirit of chloroform. While taking this medicine he was free from all difficulty in breathing and progressed well. On June 16th the euphorbia was discontinued, and there was no return of his asthma. On the 30th he was discharged much improved, though it was still thought that some râles persisted at the right supra-spinous fossa. This case seemed to be one of asthma due to bronchial irritation—whether tuberculous or not remains to be seen. The patient had been liable to attacks of dyspnœa for six or seven years; he had not lost much flesh and was able to do his work; on the other hand slight hæmoptysis at times, and the presence of a very few bacilli in his sputum, were suspicious matters. The euphorbia pilulifera, or Queensland remedy, appeared to suit him well; its action is soothing and antispasmodic, but it is not a good medicine when there is cardiac weakness, as Case 3 will show. The decoction of euphorbia pilulifera gave remarkable relief in the case of a cavalry officer who had long been liable to asthma. In this case I found much nasal obstruction, and Dr. De Havilland Hall clearly made out a bony growth as the cause of the obstruction. This patient some years previously had been rather freely treated with the galvanic cautery to his throat, shortly after which the growth appeared to have developed.

CASE 3. *Asthma with atrophous emphysema of lungs and cardiac weakness.*—The patient, sixty-two years of age, was admitted to the City of London Hospital for Diseases of the Chest, Victoria-park, on May 14th of this year. He took the euphorbia pilulifera without benefit, but it was interesting to note how the spasmodic element in the case seemed controlled by full doses of belladonna and stramonium. His family history was good, and he had enjoyed good health until two years previously, when he had influenza and bronchitis. The cough and shortness of breath have never left him. Lately spasm in breathing had been very distressing. He was a spare man, and had lost two stone during his illness. He suffered from shortness of breath when sitting up; he coughed up much muco-purulent sputum, but no blood; there were no bacilli. The pulse was 88 (rather hard and rolling under the finger), the tongue clean. The bowels were regular, and there were no sweats. The temperature was never over 99·5° F. The thorax was long and thinly covered. The chest moved up and down; the respiratory murmur was weak, with râles and very prolonged wheezing expiration; there was no dulness. The severe spasmodic dyspnœa was promptly relieved by the

following mixture: ten minims of tincture of belladonna, ten minims of tincture of stramonium, with iodide of potassium, ordered by Dr. Ware; to be taken three times a day. When relief was obtained the dose was diminished, but there was no dryness of throat or headache. On June 1st he was very low and weak, but an ether draught revived him. He was now ordered the decoction of euphorbia pilulifera three times daily. He seemed worse on this medicine, and was glad to return again to the belladonna and iodide. Bronchitic râles were abundant all over the chest, and his cough and exhaustion serious. The temperature did not rise, the pulse kept about 88, and under the use of a phosphorus pill (one-fiftieth grain) three times a day and iodide of potassium with ammonia he got on pretty well and was able to leave for his home. The antispasmodic and also anticongestive action of the belladonna and iodide of potassium was very soon observed in this case. Euphorbia pilulifera appeared to act as a cardiac depressant and gave no relief. The bronchitis was of a congestive character, and the treatment that suited best was nourishing diet, moderate doses of whisky, and phosphorus, ammonia, and iodide of potassium, with belladonna, as medicines. Caffeine citrate was tried in coffee in the morning and certainly had a reviving effect on the patient. The case was an example of atrophous emphysema of the lung in an elderly man with weak heart, complicated with bronchitis and severe pulmonary spasm—the sort of case that is by no means uncommon, and that is best treated by a climate that is mild and yet not relaxing.

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TRACHEOTOMIES IN THE NORTH-WESTERN HOSPITAL, HAVERSTOCK-HILL.

BY W. GAYTON, M.D., M.R.C.P. EDIN.,
MEDICAL SUPERINTENDENT.

THE success which has attended the operation of tracheotomy during the last three years at the North-Western Hospital induces me to place on record this series of cases. Previously a recovery after such a procedure was so rare an occurrence that for some time it became a debateable question as to whether it was justifiable. I have no opinion to offer as to the cause of this eminently satisfactory change, for most certainly there does not seem to have been any decrease in the virulence of the disease in the cases admitted. The mode of operation has, however, been somewhat different; but the after-treatment remains practically identical. A somewhat earlier appeal to operative interference may, perhaps, have tended towards a more favourable issue, and a more thorough use of antiseptic measures has been undoubtedly of service. The continuity of cases numbers 161, and of these, 132 were of diphtheria, 15 of scarlet fever complicated with diphtheria, 12 were cases of scarlet fever with laryngeal affection, and 2 were of croup associated with measles. First, I may remark that a large proportion of cases were admitted in a critical condition, and the operation was at once imperatively needed, while in some it is no exaggeration to say that the patient was positively moribund, requiring artificial respiration, injection of brandy, &c., immediately the cannula was introduced. The symptoms indicating the necessity of operating were briefly: (1) stridor, and the louder the more urgent; (2) the movements of the chest walls as seen on inspection—e.g., sucking in of intercostal spaces and bending of costal cartilages; (3) the urgency of the dyspnœa; and (4) cyanosis. With regard to the details of the operation there was nothing very special except that the uniform practice after incising the skin was to expose the trachea by cleaning the soft parts by means of the dissecting forceps; this process, which some may deem unsurgical, was undoubtedly advantageous, rendering the operation more simple, safe, and promptly practicable, and, therefore, more extensively available; it further abolished hæmorrhage, no mean advantage when the thought occurred of the possibility of wounding a large vessel, perhaps somewhat anomalous in its size and erratic in its course. Inflammation of the cellular tissues and the spread of membrane to the wound were certainly very rare, a result attributable to the antiseptics freely used at, and after, the operation. Following Mr. Parker's suggestion the trachea and larynx were thoroughly cleared of membrane by free feathering both up and down and the extraction, if possible, of the membranous deposit by the forceps. Chloroform was always administered, even when cyanosis was present. The existence of danger was obvious, but the moment an entry was effected warmth and colour were remarkably soon established. That the peril was more in anticipation than reality is shown by the absence of any fatal result occurring, while the greatest inducement was offered to "operate slowly, very slowly," as inculcated by Trousseau. The after-treatment consisted in covering the wound with a sponge saturated with the P.B. solution of perchloride of mercury, a warm moist atmosphere being always maintained by means of a tent and steam kettle. Perchloride of mercury (1 in 1000) was also freely sprayed over and around the wound every two hours, and if the parts were dry, with mucus scanty and difficult to expel, solution of soda was applied by the atomiser through the cannula into the trachea, and, as a rule, with very marked power in favouring a moist condition; indeed, our evidence on this point appears to be conclusive thus far. Feeding by raw meat juice or chicken broth and the administration of iron were the constitutional auxiliaries.

Ages and sex.—Of 2217 patients admitted in the years mentioned, 161 required the operation to be performed; 85 of these were males and 76 females. The ages varied from twelve months to twelve years; 64 cases recovered, 31 males (36·47 per cent.) and 33 females (43·5 per cent.), the percentage of recoveries from all cases being 39·75. Two of the successful results were in infants aged respectively fifteen months and sixteen months. As exhibiting the result of the operation at different ages I append the following table:—

Age.	Cases.	Recoveries.	Per cent.
One year	1	0	—
Between 1 and 2 years	14	4	28·57
,, 2 and 3 ,, ...	23	8	34·78
,, 3 and 4 ,, ...	37	15	40·54
,, 4 and 5 ,, ...	41	16	39·02
,, 5 and 6 ,, ...	15	5	33·30
,, 6 and 7 ,, ...	14	9	64·28
,, 7 and 12 ,, ...	16	7	43·75
Total	161	64	—

In tabulating the causes of death I have found it necessary, owing to the paucity of necropsies, to class together those from extension of membrane to the smaller tubes with the deaths from broncho-pneumonia, which are clinically practically indistinguishable. In the fatal results nine are classified as due to the general severity of the disease, implying by this that the fatal termination appeared due to the intensity of the poison, as shown by hæmorrhages into the skin and severe nasal and faucial affections. It will be noticed that cardiac failure was responsible for sixteen deaths, some of these occurring quite suddenly, and often at a somewhat remote date.

Causes of Death.

Extension and broncho-pneumonia	64
Cardiac failure	16
General severity of disease	9
Scarlet fever	3
Paralysis of the respiratory muscles	1
Hæmorrhage	1
Emphysema (surgical)	1
Septicæmia	1
Pertussis	1
	97

As might have been expected, the largest number of deaths occurred before the end of the third day—indeed, 60 per cent. Three cases lived fifteen days and one sixteen days after the operation, the fatal result in the last being due to paralysis. Twelve cases died between the seventh and fourteenth days. The removal of the tube was attempted as early as possible, and, as a rule, was finally abandoned between the fifth and tenth days; in one case, however, it was imperatively necessary to retain it twenty-three days.

Albumen.—The quantity of albumen in the urine appeared to be of little or no value as a prognostic indication, being found to exist from a haze to two-thirds. In only 19 cases

it was reported absent. Of course, in the very young children and in those dying soon after admission no opportunity was presented of recording this symptom. In eleven cases no membrane was seen, but in the remaining a varying quantity was expelled, and in nineteen complete casts of the trachea or bronchi were removed. In twenty-three of the recoveries paralysis of greater or less severity was observed, the palate and the ocular muscles being the most commonly affected. In one case death was due to paralysis of the muscles of respiration and deglutition some time after the operation.

In conclusion I would remark that there are some few who even now maintain that tracheotomy is useless in diphtheria, recognising the disease as a purely constitutional one with a local manifestation; the tendency to death, however, in some cases by extension of the pellicle from the fauces through the glottis to the trachea, and ultimately producing stenosis, must be acceded by those to whom the disease is always under observation as an occurrence taking place in something like 6 or 7 per cent. of the total cases. Asserting that a certain type tends to death by rapid failure of the vital powers, there yet remains a second class who undoubtedly may perish from suffocation, the strength, nevertheless, being fully maintained. These, in spite of a cyanosed appearance, much membrane in the fauces and elsewhere, and abundance of albumen in the urine, not infrequently result in perfect recovery after operation, as some of the series submitted go to prove. Beyond all question many lives may therefore be saved by an early resort to opening the trachea. The general mortality from diphtheria in the fever hospitals of the metropolis ranges from 39 per cent. to 27 per cent., and, in support of the value of tracheotomy I would mention that since we have had greater reliance upon operative treatment the death-rate from diphtheria in this hospital has been reduced from 31·42 per cent. to 26·48 per cent., including necessarily those cases admitted in a hopeless condition and which unfortunately are very numerous. With the steady increase of diphtheria the subject of tracheotomy is one of vast and vital importance, requiring the utmost attention of our best physicians and surgeons, and it is one not likely to be exhausted by the superficial observer and thinker.

THE ETIOLOGY OF EXOPHTHALMIC GOITRE: A NEUROSIS; WITH A NOTE ON TREATMENT.

BY E. A. R. NEWMAN, M.B. CANTAB.,
SURGEON-LIEUTENANT, INDIAN MEDICAL SERVICE.

HAVING seen a note on the Etiology of Exophthalmic Goitre in THE LANCET of June 2nd, 1894, I am tempted to offer a few remarks on the subject. The nervous system has long been the supposed seat of origin of this disease, the exploded theory of derangement of the cervical sympathetic ganglia marking the commencement of this belief. More recently the experimental production of exophthalmos in dogs by section of the restiform bodies of the medulla oblongata, and the discovery of the vaso-motor centre, which clinical experience shows is obviously deranged in this disease (the flushing and sensation of heat in the skin, throbbing of the carotids and thyroid arteries and, in extreme cases, of the peripheral arteries—e.g., dorsalis pedis—and rapid action of the heart being familiar to all), have led many authorities to locate the origin of the disease in the medulla oblongata; some of them have even described lesions discoverable after death. Briefly, it may be said that these are not constant in appearance or occurrence, and all sources of error do not appear to have been eliminated. Others—and amongst them, I believe, Dr. Gowers[1]—uphold the theory of functional derangement of some part of the medulla oblongata. I would go a step further, and suggest that the disease is due to a functional disturbance of the brain itself, manifesting itself by and through the lower centres in the medulla oblongata. Both psychical and clinical observations are in support of this. Darwin, in his "Expression of the Emotions," gives a description of the effects of extreme terror—the trembling limbs, rapid heart, and starting eyes—in a close description of an aggravated case of the disease. This suggests that all the necessary mechanism is present and only needs a stimulus to put it into abnormal action. Clinically, fright or some emotion is a well-recognised cause in many cases, acting doubtlessly on or through the mind. Changes in the mental condition are not infrequent. The patient looks "nervous," and often will say so, while the friends not infrequently will say that her temper is quite different—she is frightened, shy, or irritable, as the case may be. Bad dreams are sometimes complained of, and morbid tastes or fancies may be developed. This leads directly to more serious mental changes, amounting in some cases to only slight aberration, in others to acute mania. All these facts show in greater or less degree that a profound mental alteration accompanies almost invariably the more obvious symptoms of the disease. A history of insanity, epilepsy, or some other form of mental instability is obtained in some cases, while the hereditary character of the disease itself is in certain cases on record. (Trousseau, I believe, gives an instance of its occurrence in more than one member of three successive generations.) Lastly, exophthalmic goitre is more frequent in females, statistics varying from four to twenty-five cases in women to one in a male. This shows a rather wide discrepancy in the experience of different observers, but points to the fact that it is far commoner in the more "neurotic" sex. There are no doubt many cases in which no history of fright, heredity, or mental instability in other members of the family can be obtained. Such cases, I venture to think, in no way invalidate the theory of neurotic origin and may be accounted for by the supposition of a gradual and quiet development of the morbid condition in the patient, or more probably in successive generations of her family, finally reaching a climax in herself. From such a change in the vascular condition of the thyroid gland as takes place in this disease it is only probable that some corresponding change may, and often does, occur in its function—whether in the increase or decrease of its excretory or secretory function is uncertain. But how far such a change manifests itself symptomatically it is impossible to say; and, though the tremors and rapidity of the cardiac action may be caused or aggravated by such functional aberration in some cases, equally certain is it that in others they precede by some considerable time any obvious enlargement in the thyroid gland. Theory, however, is of little avail unless some practical conclusion can be drawn from it. The point I would specially draw attention to in the treatment of the disease is that the use of nervous tonics and sedatives would seem to point to the most successful way of combating it, not omitting general measures, such as iron, when necessary, and plenty of fresh air. The late Sir George Paget (Regius Professor of Medicine at Cambridge) once informed me that he had found ammoniated tincture of valerian useful in some cases where other drugs had failed. Unfortunately, I have had but small opportunity of using it, but in two or three cases distinct improvement was noticed. Electricity, too, in the form of the constant current, is now successfully employed; the necessary conditions seem to be a weak current locally applied. I do not know whether statical electricity has been used, but it might be, with reasonable hope of success. In conclusion, I would express my belief that the complaint will be most rationally treated from the standpoint that it is of "neurotic" origin.

Jandola Fort, Punjaub.

[1] Diseases of the Brain.

AN UNDESCRIBED INFLAMMATORY ULCERATION OCCURRING IN THE TROPICS.

BY W. C. BROWN, M.D. ABERD.

A VARIETY of circumscribed destructive inflammation of the skin and subcutaneous tissue which apparently has not been described prevails largely in the Malay Peninsula and the Western Siamese States. It is locally called "Tongkah boil," but like most local terminology of disease the name is inapplicable. The affection is not peculiar to Tongkah, an island on the coast of the Siamese provinces to the north of Penang, 70° north latitude, nor, indeed, to the Malay Peninsula, and it is more erysipelatous than furuncular in its nature. The favourite site of the disease is the dorsum of the foot, but it occurs not infrequently over the sacrum, the shin bone, and on the forearms and hands. Preferential selection for regions thinly clothed with flesh is, therefore, a

distinctive feature; and it is on account of the inexpansile nature of the structures in these situations that pain is a marked characteristic of the affection. The disease commences as an inflamed nodule of skin and subcutaneous tissue, not unlike the incipient stage of erythema nodosum. The nodule becomes violently inflamed in the course of a day, the inflammation spreading up to the ankle and down to the toes. This inflammation is most intense, generally preceded by a rigor and accompanied by fever; the sensations it gives rise to are said to resemble the hot iron boring feeling of acute gout. In most cases no concurrent evidence of gout or rheumatism is obtainable, nor is sore-throat or other indication of erythema diathesis to be observed. On the second day minute blebs form on the inflamed skin. These are filled with a highly acid, dirty coloured secretion, which is capable of producing a fresh patch of inflammation when rubbed into healthy skin or when inserted under the epidermis in dogs and monkeys. These blebs increase in size until the fourth day, when they rupture spontaneously; but much of the derma has by this time sloughed, and eventually it is entirely shed. In severe cases the whole patch sloughs and the extensor tendons and metacarpal bones are exposed at the bottom of a phagedænic-looking ulcer; but, as a rule, the ulceration is confined to the skin, and there is a tendency to heal after there has been a free escape of serum. Small quantities of localised pus may occasionally be seen, but it is characteristic of the infection that the inflammation does not tend to end in suppuration. The lymphatic glands in the groin are always enlarged, and there is usually inflammation along the lymph vessels of the leg and thigh. After the skin has sloughed, and a free discharge of serous matter has exuded, which usually happens about ten days from the commencement of the disease, the granulations develop a healthy action, the swelling rapidly subsides, and the epidermis of the whole foot and toes is shed in large flakes. About the eighteenth day of the disease the patient is usually able to walk about, and convalescence and complete healing rapidly take place, leaving, as may be imagined, an ugly scar, which shows great tendency to become keloid. All races and classes are liable to suffer from this troublesome affection. Most frequently strong healthy coolies are the victims, those of them who wear Chinese shoes without stockings being most liable to suffer. The upper edge of a Chinese shoe constricts the skin much more than a laced or elastic shoe, and as it is generally dyed a gaudy colour it may be reasonably suspected of being at least the exciting cause of the trouble. There is nearly always some evident local irritation at the seat of the inflammation; one recent case, a severe one, was attributed to the bite of a centipede, others appear to have developed from neglected mosquito bite ulcers, and from thorn and splinter wounds. When it occurs over the sacrum it has all the appearance of a highly inflamed bedsore, the source of irritation in these cases being the hard plank beds which the natives universally employ for the sake of coolness. There can, in fact, be no question but that the poison of the disease is a specific one, introduced at the seat of a local irritation much in the same way that anthrax originates in the bite of a fly or mosquito. It is by no means confined to the coolie or labouring class, but is frequently met with in wealthy Siamese and Chinese merchants who wear European shoes, and in Malays, who wear no shoes at all.

This peculiar inflammation is so evidently parasitic in its nature that it would appear probable that some causal organism could be easily demonstrated. This, however, has not as yet been done. Unlike external anthrax, though in appearance somewhat resembling it, the disease occurs where there can be no possibility of infection from the lower animals, there are no anthrax bacilli in the secretions, and the inflammation precedes the vesicular eruption and does not, like malignant pustule, take its origin at the base of a ruptured bleb. The disease is manifestly an entity; it does not resemble erysipelas or any form of dermatitis, nor has it any affinity with the carbuncular and furuncular localised inflammations so common in the tropics. Treatment is routine and obviously simple. There is evidence, however, that a strong solution of nitrate of silver in spirit of nitrous ether (Allan Jamieson's formula) painted over the inflamed skin may arrest the disease at the outset. Should this fail, rice poultices sprinkled with liniment of opium relieve pain more effectually than any other remedy. The ulcerative stage is best treated by dressings soaked in a 1 in 2000 solution of corrosive sublimate, frequently changed. Opium must be given internally at first, and stimulating tonics afterwards.

Penang, Straits Settlements.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF FOREIGN BODY IN THE AIR PASSAGES FOR A PERIOD OF NINE MONTHS.

BY G. MICHELMORE, M.R.C.S. ENG., L.S.A.

A BOY seven years of age first came under my care in February last, but had been receiving medical attention since November, 1893. From the history of the case it appears that the patient had enjoyed good health up to October, 1893, and at the beginning of his illness he was away from home staying with some friends. On making inquiries I found that he first presented symptoms of general malaise with sickness and loss of appetite, and he soon developed a severe paroxysmal cough which was accompanied by profuse expectoration, and began to lose flesh. The friends with whom the patient was staying, becoming alarmed at his condition, called in a medical man to see him, who informed them that the boy was suffering from phthisis. On coming under my observation I found him to be somewhat emaciated, with a cold, clammy skin, small, quick pulse, and furred tongue. The breathing was rapid, and over the front of the chest loud, sonorous and mucous rhonchi were to be heard. There was dulness on percussion, with diminished breath sounds over the lower thirds of both bases. Cough was frequent and violent, and attended with dyspnœa and cyanosis. The expectoration was purulent in character, often mixed with blood, and very difficult to expel. The patient had several sharp attacks of broncho-pneumonia, the temperature running up on these occasions to 104° and 105° F. The dyspnœa and cyanosis were much exaggerated, and several times the child was in imminent danger of death from asphyxia. These attacks generally passed off within forty-eight hours; the temperature dropped to normal, and the expectoration, which during the attacks had been scanty, became more profuse and was generally blood-stained and frothy. The patient gradually became more feeble, lost a good deal of flesh, had profuse night sweats, and presented all the appearances of a case of pulmonary tuberculosis. On Tuesday, June 5th of this year, I received an urgent message from the mother of the child, asking me to see him at once, as he was very much worse. On my arrival I found him sitting up in bed with his head thrown forward, his elbows resting on his knees, and his hands supporting his chin. There was great dyspnœa, the veins of the neck stood out like cords, cyanosis was marked, and cough was violent and paroxysmal. These symptoms abated after the expectoration of a little frothy, blood-stained mucus, but the patient was so exhausted that I did not examine his chest. There was a good deal of pain of a pleuritic character in the left side, and the temperature was 103°. When I paid my visit on the following morning the mother informed me that the boy had had another severe attack of coughing, and some three or four hours after my previous visit he had spit up with some force what looked to be a clot of blood, but as she heard it drop into the chamber utensil she carefully examined it, washed away the clot, and found a plum-stone. The patient was greatly relieved, and exclaimed that the pain in the side had gone. He passed a good night and had very little cough. After the expulsion of the foreign body he rapidly began to mend. The cough and expectoration gradually ceased, the appetite returned, and he is now convalescent.

Remarks.—On making inquiries I found that only on one occasion whilst he was away from home had the patient eaten any plums, and that was in August last, but both the boy and his friends were positive that he had had no sudden attack of choking, though it appears improbable that a plum-stone quite three-quarters of an inch in length, with pointed

extremities, should have passed into the trachea without causing primary symptoms. The stone evidently became fixed in the trachea and must have set up considerable ulceration, from the large quantity of pus that was expectorated.

Tiverton.

CONTAGIOUS PNEUMONIA.

By FREDERICK H. DALY, M.D.

IN THE LANCET of Nov. 12th, 1881, I published a paper headed "Contagious Pneumonia." The article was based on six cases of pneumonia occurring in the same house in about a fortnight, two proving fatal. I was unable to find in the text-books of that day any account of such a form of pneumonia, spreading from person to person like measles or scarlet fever. Mr. Wynter Blyth and one or two other writers had related some cases which left little doubt in my mind as to their being this contagious form of the disease; at the time, however, many were inclined to doubt if there was really any form of pneumonia that was contagious from person to person. Since 1881 I believe there has been an undoubted recognition of a form of pneumonia that proves contagious. I am quite satisfied that this disease may be contracted from another person suffering from it—I do not at all mean the pneumonia occurring in the course of epidemic influenza. During the past ten years more than one medical man has informed me that he has had in his practice an unmistakable instance of the contagiousness of pneumonia. I have myself during this period seen no case until quite recently.

On May 27th of this year, at 10 P.M., I was asked by a medical man to see a case of pneumonia in consultation with him. I found a man aged sixty-three years suffering from an attack of acute typical pneumonia. He was very ill; his temperature was 104° F., the respiration being very rapid. The left lung behind was solid from apex to base, and there was also some fine crepitation over the back of the right chest. The patient was nursed day and night by his wife. He died on May 29th, two days after I had seen him. On the same day that he died his wife was seized with acute double pneumonia and died after two days of illness. I did not see this case myself, but a colleague, who called me in to see her husband, informed me of the case and its sad termination. On Sunday, June 3rd, at 6 A.M., I was sent for to see my colleague. I found him suffering from acute pneumonia. He was taken ill, he informed me, on the previous Thursday. He was greatly depressed on that day, having to sign the death-certificates of these patients while he was himself ill. On Thursday afternoon he had a severe rigor, and pneumonia then developed. Almost the first remark he made to me on my visit was: "It is no good. I have taken the disease from Mr. and Mrs. ——. It is all over with me." I again saw him at 1 P.M. He was very bad. His aspect was worse, and on visiting him again at 6.30 P.M. I found he was fast sinking. His finger-nails were quite blue, and so were his lips. He died soon after my visit. I can draw no other conclusion from these cases than that Mrs. —— contracted the disease from her husband, and that my colleague again took the disease from his patients, Mr. and Mrs. ——.

Contagious pneumonia is a most fatal disease, all these three patients dying. In my former series of six cases two out of the six died. Taking the nine cases, this would make the mortality over 50 per cent. Happily, this form of the disease is rare; but the question arises, Are all cases of pneumonia contagious to a certain degree? I cannot say. It is not, however, improbable that pneumonia may be contagious more or less—as contagious, perhaps, as phthisis or typhoid fever. I hope that medical men will record any cases of contagious pneumonia occurring in their practice.

Hackney-downs, N.E.

MIRFIELD MEMORIAL HOSPITAL.—According to the first annual report of this hospital the expenditure has exceeded the receipts by £138 11*s.* 3*d.*, the outlay being £635 8*s.* 4*d.*, while the income was £496 17*s.* 1*d.* Towards this deficiency Mr. E. T. Ingham has given £50 7*s.* 9*d.*, in accordance with a promise to meet one-third of any deficiency, and we hope to hear that his generous example has been followed speedily. Seventy-one patients have been admitted to the hospital since its opening.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Prœmium.

ST. MARY'S HOSPITAL.

FIVE CASES ILLUSTRATING THE DISEASES AND THE SURGERY OF THE APPENDIX VERMIFORMIS.

(Under the care of Mr. H. W. PAGE.)

(Concluded from p. 259.)

WE published last week the first three of this series of cases in illustration of the susceptibility of the vermiform appendix to disease, and of the frequent obscurity of the symptoms. In support of the latter point Case 5 will in particular be found instructive.

CASE 4. *Recurrent attacks of appendicular colic; removal of appendix in state of quiescence; rapid recovery.*—A man aged twenty-four was admitted on March 12th, 1894. Eight years ago he had an attack of severe abdominal pain after having strained himself in lifting a weight and he was laid up for three days. In three months he had a second attack, when the pain was chiefly in the right iliac region, but as far as he could remember there were no other special symptoms. In March, 1893, he had another attack of pain and this time vomiting accompanied it for twenty-four hours. He was laid up for a week, but there was no known rise of temperature. In August he was again ill, but was unable to lie up by reason of work. At that time there was slight hæmatemesis. Another attack followed in October and he was laid up for a week. In none of the attacks mentioned up to this date had any abdominal lump been felt. In January of this year he had an attack of greater severity than any before. Severe pain lasted for a week, there was much vomiting, his temperature was 100°F., and there was a definite lump to be felt in the right iliac region, described as being about the size of the palm of the hand. This steadily diminished in size after the attack was over, but discomfort, if not actual pain, continued, and as late as a fortnight before his admission to the hospital there were certainly some fulness and increased resistance. His history thus pointed very clearly to recurrent attacks of increasing severity in connexion with some disease of his appendix; and, having consulted Mr. Treves as well as Mr. Page, he underwent operation in St. Mary's Hospital on March 14th. A small lump was distinctly to be felt midway between the umbilicus and the anterior iliac spine when he was anæsthetised, and this point was accordingly taken as the centre of an oblique incision two inches and a half long. Immediately the peritoneum had been opened the appendix was seen to be stiff, erect, swollen, and seemingly desirous to get out of the abdominal cavity. An inch and a half from its free extremity it was bound to the neighbouring cæcum by pretty firm adhesions, and when these had been gently released there was found a minute loculated cavity between them containing dried-up pus. Here also the appendix was sharply kinked. There was not the smallest indication of there having been perforation. The appendix, having been ligatured on the near side of the kink, was then cut off. The stump was cleansed, and the sleeve of peritoneum was drawn and sutured over it. The abdominal wound was then closed by tiers of sutures. The appendix was found to be tightly constricted at the site of the kink, and the whole lumen was small by reason of the great thickening of the walls. The after-history was one of uninterrupted progress to recovery and there is no point worthy of record. The patient left the hospital on April 18th, five weeks after the operation, four of them passed in bed in order that the wound might be so firmly healed as to avoid the risk of future yielding.

Remarks by Mr. PAGE.—This may be looked upon as one of the simplest and probably least dangerous of the diseases to which the appendix is liable. A kink is the primary cause of the trouble, and "appendicular colic," as suggested by Mr. Jessop, is an excellent term to apply to the train of symptoms. They are just the sorts of cases, however, in which the trouble is likely to be greater and more frequently

recurrent as time goes on, and the very cases also in which removal of the appendix is associated with a minimum of danger and is followed by the best results.

CASE 5. *Obstruction of bowels from kink of small intestine secondary to perforation of appendix.*—This case is perhaps the most remarkable of the series. There was no clue during life to the real condition of things revealed at the necropsy. A woman aged thirty-four was brought by a medical man to St. Mary's Hospital with a view to immediate operation on May 12th, 1894. On the morning of the 8th, after straining at stool, she had been seized with pain in the right hypochondriac and umbilical regions. A few hours later she was sick, and a medical man was sent for. He thought her very ill, and suggested a consultation with a surgeon, but thereupon his attendance was no longer required. The vomiting now increased, and with it there was neither action of the bowels nor expulsion of flatus, so that her friends proceeded to treat her with aperients and enemata. Two days were thus spent, and the vomiting having now become distinctly feculent the medical attendant was called in again, and he, as it has been related, brought her to the hospital. Mr. Page was sent for in the evening. There was at that time no indication of anything very seriously wrong with her; she had not vomited for several hours, the abdomen was neither tender nor distended, and she bore kneading without pain. The temperature was normal and the pulse 96. Fulness and resistance, if anywhere at all, were to be felt in the *left* iliac region. There seemed to be no immediate call for operation, and we were told that she was decidedly better than she had been two days previously. It was now late at night, and it was resolved to postpone operation until the morning, and in the meantime to give two copious enemata. The house surgeon was also to knead the abdomen on the assumption that the case might perchance be one of accumulated fæces, a mass of which caused the physical signs in the left iliac region as already named. These remedies were without avail, and when Mr. Page and Dr. Lees saw her together on the following morning it was deemed right to operate at once. It should be said that then only for the first time was the precise history obtained with which the notes open, the woman on the previous evening having told varying stories. It was now, at any rate, clear that the attack had begun suddenly, and it was thought not altogether improbable that the intestine might be obstructed by a band. Accordingly the abdomen was opened below the umbilicus in the middle line. Much distended and congested small intestine was at once visible, but nothing else was to be seen or to be felt by the exploring hand. The intestine was therefore brought out inches by inches outside the abdomen for examination. The further down they went the more distended and congested it became, and when some feet had at length been examined in this manner the gut seemed suddenly to yield as it was gently pulled along. A teaspoonful or so of thin offensive pus followed and was mopped up with sponges. It then became obvious that a kink had been unfolded, and that the peritoneum was deficient and the muscular coat of the gut exposed at the spot where the peritoneal surfaces of the kinked piece of bowel had been in apposition. Below this point the gut was collapsed and empty; and inasmuch as, in addition to the kink, there were superficial appearances as if the bowel might have been ensnared in a noose, it was very naturally believed that the actual state of things had been discovered and the condition relieved. Mr. Page discussed the propriety of there and then resecting the piece of gut which was damaged beyond repair at the site of the kink, but it was agreed that the state of the patient forbade such a step. The injured portion of bowel was therefore drawn out and sutured to the abdominal wall with the intention of opening it in the evening when adhesions had been formed. The patient rallied well from the operation, and seemed to be going on favourably during the day. Mr. Page went to see her in the evening with the object named; but she died almost suddenly as he entered the ward. The necropsy was made on the following day, and then it was found that there had been acute inflammation and local pus formation from perforation of the appendix vermiformis close to the attachment of its mesentery, and that the intestine had been sharply kinked by adhesions thus originated. There had been no band or noose.

Remarks by Mr. PAGE.—This patient came under observation far too late for any likelihood of success from operation; but even had we seen her sooner it is very questionable whether the real cause of her condition would have been discovered. Never at any time did the symptoms or physical signs in any way suggest that the case was one of disease of the appendix. The lesson is again emphasised that the surgeon will do well to bear the appendix ever in mind when obscure abdominal conditions come before him or when he has been called to operate. This case, like the first of the series, shows that the appendix may really be to blame when there is an entire absence of symptoms pointing specially to it.

I have purposely refrained throughout the remarks on the individual cases from using the word "appendicitis," not alone because it is a barbarous word, but even more because it is clearly inapplicable to the very various conditions of disease to which the appendix is liable. Kink and appendicular colic, retained secretion from one cause or another, perforation from the injurious pressure of a concretion, and gangrene from twist or other impediment to the circulation through the mesenteric vessels are conditions widely different from each other, and are surely misnamed if each and all are spoken of as appendicitis. Furthermore I have refrained from use of the term "perityphlitis," and for this very valid reason that the "tuphlon," or cæcum, has nothing whatever to do with the conditions which have been named. The third case affords as clear evidence as could be wished that constipation is not due to fæcal accumulation in the cæcum, but that it owns a totally different cause. It is most important that this should be recognised, if only to prevent the loss of precious time while resort is being had to aperients. Error dies hard, and even now there are those who seem to believe in the stercoral ulcer, by faith, it is to be supposed, rather than by sight. I have now seen and operated upon a goodly number of cases of abdominal illness due to disease of the appendix in one or other of its manifold varieties, and increasing experience has shown me, not less than the writings of others have taught me, that early exploration is the best practice and most conducive in the long run to the safety of the patient. Not a few physicians are coming to the same conclusion, and, as I said some time ago at the Clinical Society, it would be well if abdominal cases were regarded as surgical from the beginning, and were admitted directly to the surgical wards. Our chief difficulty lies in diagnosis, and here I would say that while abdominal pain, vomiting, high temperature or low, constipation, and prostration are of no special value and tell no more than that there is some kind of abdominal mischief, the chief and most trustworthy indications of disorder of the appendix are to be found in local swelling, abdominal resistance, immobility, and tenderness in the region where the appendix usually lies. Examination will rarely fail to find one or other of these local physical signs, if desirable under anæsthetic, when the appendix is at fault, and in my experience the absence of them is very much against the appendix being at the root of the symptoms in any case of severe abdominal disorder.

Reviews and Notices of Books.

Select Methods in Chemical Analysis (chiefly Inorganic). By WILLIAM CROOKES, F.R.S. Third Edition, Revised and Enlarged. London: Longmans, Green, and Co. 1894.

PROFESSOR CROOKES writes with distinct authority on the subject of chemical analysis, and no one recognises better than he does the absolute necessity of paying strict attention to those minute details of operation without which no really accurate analysis can be made and no valuable results obtained. Indeed, if it had not been for Professor Crookes' remarkable perseverance and patience to separate by a series of long, laborious, and well-deliberated chemical processes the oxides composing the rare earths that are now so closely associated with his name, it is probable that all the beautiful effects of phosphorescent phenomena exhibited by these bodies in the field of the electric discharge would still have been hidden from our view. Probably, also, radiant matter spectroscopy would not by this time have been employed in the detection of the presence of rare earths, by which means so many new elements have in the last few years been

recognised. And when we reflect upon the enormous impetus which the study of these phenomena has given to us in enabling us to obtain a clearer and deeper insight into the atomic constitution of matter it is impossible to overestimate the importance which Professor Crookes himself attaches to the diligent search for the merest traces of substances which, as he showed, could be increased by a series of careful operations to microscopic heaps, to the elimination of the all too predominating constituent, and at length concentrated by continuing the process until a quantity of material is obtained sufficient for the purposes of a complete investigation.

"Chemistry, except in a few instances," says Professor Crookes in a chapter of the book before us, "as, for example, water analysis and the detection of poisons, where necessity has stimulated minute research, takes little account of 'traces,' and when an analysis adds up to 99·99, the odd 0·01 per cent. is conveniently put down to 'impurities,' 'loss,' or 'errors of analysis.' When, however, the 99·99 per cent. constitutes the impurity, and this exiguous 0·01 is the precious material to be extracted, and when, moreover, its chemistry is absolutely unknown, the difficulties of the problem become enormously enhanced. Insolubility, as ordinarily understood, is a fiction, and separation by precipitation is nearly impossible. A new chemistry has to be slowly built up, taking for data uncertain and deceptive indications, marred by the interfering power of mass in withdrawing soluble salts from a solution, and the solubility of nearly all precipitates in water or in ammoniacal salts when present in traces only. What is here meant by 'traces' will be better understood if I give an instance. After six months' work I obtained the earth didymia in a state which most chemists would call absolutely pure, for it contained *not more than one part of impurity in five hundred thousand parts of didymia!* But this one part in half a million profoundly altered the character of didymia from a radiant matter spectroscopic point of view, and the persistence of this very minute quantity of interfering impurity entailed another six months' extra labour to eliminate these final traces and to ascertain the real action of didymia pure and simple."

We have been prompted to quote the foregoing paragraph at length, since surely it is calculated to inspire the reader with confidence as to the probable value in regard to accuracy of the methods which Professor Crookes has recorded in this book as "select." The methods so selected have in the main been proved in his laboratory, while other methods, possibly no less efficient, have been passed over because he cannot vouch personally for their value. The work is, in short, a collection of novel or little known processes, and an earnest, so to speak, of the author's desire to bring before the notice of chemists a number of "little known expedients and precautions which prevent mistakes, ensure accuracy, and economise time." As indicated in the title, it is chiefly inorganic analysis with which the book deals, beginning in the first chapter with the metals sodium and potassium, and so on right through the members of the metallic families. Methods for the detection and separation of the rare earths are discussed in Chapter III., and here also will be found extracts a portion of which we have already quoted from the author's charming description of his well-known investigation on this subject, of which a full account was embodied in his memorable addresses both to the Royal and Chemical Societies. Sulphur, phosphorus, nitrogen, and later the halogens, follow in sequence, while the final pages contained in Chapter XV. are devoted to general methods of manipulation and to just those practical hints (or, may we be allowed to say, "tips") to be familiar with which every practical chemist is eager. One departure in the book which we particularly welcome is the devotion of part of Chapter XIV. to a description of the methods of electrolytic analysis. We have ourselves found the electric current of extreme service in analysis, and especially in the detection and estimate of the metallic poisons. Thus, in many instances it enables the investigator to deposit the metal—e.g., copper or mercury—on platinum immediately from the contents of the stomach or from the vomit, and, if need be, as in medico-legal cases, to produce and exhibit the deposited metal in court.

Professor Crookes' book is one which no reviewer, if he has any experience of chemical analysis and its difficulties, can fail to praise, since he will see that it furnishes the analyst at once with a clear and readable description of those processes which modern experience has proved to be reliable and trustworthy, and which are reasonably speedy without involving any sacrifice of accuracy.

Manual of Hygiene. By J. WHITE WALLIS, Member of the Sanitary Institute. London: Kegan Paul, Trench, Trübner, and Co., Limited. 1894.

THIS book is primarily intended by the author as a text-book in Hygiene suitable for children before leaving school. From the manner in which he has handled his subject, however, we should very much incline to the opinion that he has aimed a good deal above the heads of his readers, for we doubt whether the average school child is possessed of such an amount of information in physiology and chemistry as would enable him to follow his remarks. Further, we cannot wholly acquit Mr. Wallis himself of inaccuracy when he tells us that an adult man loses 20 grains of nitrogen a day and should consume 310 grains of carbon in twenty-four hours; that nitrogen enters the system through the air; that "nerve-foods" (tea, coffee, and alcohol) act on the "nervous system of the spinal cord"; and that pure air contains only 2 parts in 10,000 of carbonic acid gas. Again, in describing the action of pancreatic fluid on foods its influence on proteids obtains no mention. We cannot say that the plan adopted by the author in the arrangement of his subject-matter is always happy; for after devoting a chapter to Dwellings, in which in the short space of eleven pages drainage, ventilation, and heating are discussed, we find under the section Air many points touched upon which should have found a place under Ventilation. We notice also a complete absence of diagrams in the book, which omission in a work intended chiefly for the young is, we think, unfortunate.

Madeira and the Canary Islands. By A. SAMLER BROWN. Third Edition. London: Sampson Low, Marston, and Co. 1894.

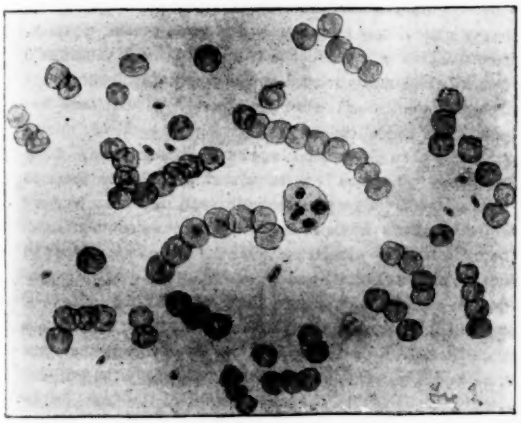
THE appearance of a third edition of this guide-book shows that it has found its public. It is packed full of information regarding Madeira and the Canaries, and will be found of great practical utility to all who intend to visit those islands. The author writes for the general reader and deals fully with the general characteristics of the islands, their natural productions, the ways and customs of the people, hotels and means of communication, excursions &c. He refers largely to meteorological questions, but wisely refrains from dogmatism regarding medical controversies. As regards Madeira he says: "The general characteristics (i.e., of the climate) are fresh bright days, when rain may or may not fall at intervals, and fine days when no rain falls, but the clouds gather round the central mountains and even extend over the sea. The air is sedative and favourable to those who ought to keep quiet. Another special advantage is the almost absolute freedom from dust." Of the Canaries he says: "The Canaries differ in many important particulars. The climate is more exciting than that of

Madeira; rainless and cloudless days are more frequent, and the temptations to invalids to overdo their strength are consequently greater. There is also more wind and more dust." Regarding Puerto Orotava, the author says: "In a good winter there is but little cold weather, but what cold there may be is felt, as it is accompanied by damp. From the middle of January to the end of February is the worst time, and in a bad year may be disagreeable, the sky being overcast day after day, and the sun being obscured by the thick mantle of clouds which will then envelop the island. Such winters are, however, the exception ..... a day when there is no sunshine, or when one cannot be out of doors for at least three or four hours, is almost unknown."

THE PLAGUE AT HONG-KONG.

WE have received the following notes from Dr. J. A. Lowson of Hong-Kong, who has forwarded a number of preparations of the plague bacillus, some of them prepared for him by Professor Kitasato, others prepared by himself, of which we give several representations. The organism—which is a bacterium resembling the bacilli found in the hæmorrhagic septicæmias, except that the ends are somewhat more rounded—when stained lightly appears almost like an encapsuled diplococcus, but when more deeply stained it has the appearance of an ovoid bacillus, with a somewhat lighter centre, especially when not accurately focussed. When, however, it is focussed more accurately it is still possible to make out the diplococcus form. It is quite possible that the capsule has been produced artificially,

FIG. 1.



Ob. $\frac{1}{12}$ homog. + oc. 8 compens.; length of tube 140 mm. Bacilli and blood from case of plague. Illustration of preparation made by Professor Kitasato and forwarded by Dr. Lowson.

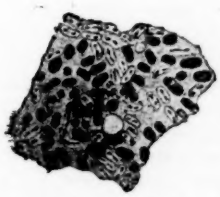
though in Fig. 3 this does not appear to be the case. The positions in which it is most frequently met with—sometimes apparently in almost pure cultures—are the glandular enlargements which occur in the groin, in the axilla, and in the neck, though these enlargements are not always met with in the rapidly fatal cases. These enlarged glands are intensely congested, or rather they appear to be infiltrated with blood. In this blood, which is in a state of disintegration, mixed with the elements of the glandular tissue which are also broken down, the organisms are exceedingly numerous. They are also met with in considerable numbers in the spleen and in the other organs in those positions where there is a slowing of the circulation as it passes through capillary networks or sinuses. The organisms are also found even in the blood in the heart and large bloodvessels, as seen in Fig. 1. Dr. Lowson hopes shortly to be able to send an account of the disease and also

FIG. 2.

Ob. $\frac{1}{12}$ homog. + oc. 8 compens.; length of tube 180 mm. Bacilli in blood of mouse. Illustration of preparation made by Professor Kitasato and forwarded by Dr. Lowson.

of the appearance of the micro-organisms when cultivated outside the body; but he says: "I have recently been so

FIG. 3.



Ob. $\frac{1}{12}$ homog. + oc. 8 compens.; length of tube 180 mm. Illustration of preparation of splenic pulp in case of plague made by Dr. Lowson.

engaged in looking after the sick, organising hospital work, inspecting insanitary houses, and looking after the disposal

FIG. 4.

Ob. $\frac{1}{12}$ homog. + oc. 8 compens.; length of tube 140 mm. Illustration of plague bacillus prepared by Professor Kitasato and sent by Dr. Lowson

of the dead that I have been unable to find time to do more than send you these few notes and specimens, which, however, I thought might be of interest to some of your readers."

EXHIBITION OF AMBULANCE WORK AT CHUDLEIGH.—On July 26th the annual exhibition of the Chudleigh Cottage Garden Society was held in a field close to Chudleigh Rocks. In the evening the Ambulance and Field Stretcher Bearer Company, under the direction of Surgeon-Captain C. L. Cunningham, gave an excellent exhibition, in which they showed that they had fully availed themselves of the lessons in ambulance work received from their director. A sham fight was organised between a supposed party of Arabs and a company of Engineers; the wounded were brought out of action and were promptly attended to with all proper detail. The men in the course of the sham fight availed themselves for signalling purposes of an ingenious method of signalling invented by Surgeon-Captain Cunningham for use in the Soudan campaign.

THE LANCET.

LONDON: SATURDAY, AUGUST 11, 1894.

THAT Lord SALISBURY takes a deep interest in all matters pertaining to science is well known, but that he has found time to study and examine minutely the lines of scientific research in several directions will now perhaps for the first time be widely appreciated and allowed. His presidential address to the British Association for the Advancement of Science, which we publish to-day, gives abundant evidence of an intimate acquaintance with modern science; and many, more notably those whose interests are confined to special branches, or whose circumstances and environment make it no easy task for them to keep pace with scientific progress at all, must have felt grateful for the admirably clear and able review which his lordship has given of the general progress of science during the last half century. It was his keen political instinct, doubtless, that led him to apologise to his audience for occupying the position of President, and to confess that in the presence of the high-priests he was only a layman; but, as his hearers must have felt at the conclusion of the address, his consummate treatment of the subject compelled them to wish that there were not only more laymen but more high-priests like their President, gifted with the qualities enabling them to present the position of scientific affairs and interpret the issues of abstruse scientific investigations in a lucid and interesting way—a way which will appeal at once to every intelligent man, while affording an intellectual feast to the more particularly enlightened.

Despite the brilliant advances made of recent years—notably in chemistry, biology, and astronomy—it remains a question whether we are any nearer the solution of the problems of the origin of life, of matter organic and inorganic, than we were before the new paths were opened; indeed, the astonishing accumulation of fresh facts and the marvellous opening up of new sources of discovery which the invention of minute and excessively delicate methods of investigation and research has afforded us, would seem to have landed us in deeper obscurity than before—a position that is well brought out by Lord SALISBURY'S examples. "We cannot conceive," he said, "on any possible doctrine of cosmogony, how the sixty-five elements known to the chemist came into existence. Whether you believe that creation was the work of design or of inconscient law, it is equally difficult to imagine how this random collection of dissimilar materials came together." It was hoped that as methods improved it would be found that these elements had one common origin. First of all came the establishment of the definite weights of atoms by DALTON; then the inimitably accurate analyses by the illustrious STAS, which fixed the weight of the atom; but in all this marvellous work not a particle of evidence was obtained in support of PROUT'S hypothesis that the atoms of each of of elements consist of so many atoms or even half-atoms the hydrogen, the lightest of them all. The reply of the laboratory has always been clear and certain—that there is not in the ascertained and proven facts the faintest foundation for such a theory; nor has the subsequent application of extremely delicate spectroscopic methods or the discovery of the periodic law of MENDELÉEFF (who was actually able to successfully predict the existence of elements which have since been discovered, with properties which have since been verified even to their atomic weights) led to any clear solution of the problem. All have failed, as Lord SALISBURY said, to show what the atom is—whether it is "a movement, or a thing, or a vortex, or a point having inertia; whether there is a limit to its divisibility, and, if so, how that limit is imposed; whether the long list of elements is final, or whether any of them have any common origin." After referring briefly to the unsolved problems of the nature of light and of the ether which is assumed to exist in order to satisfy the wave theory, Lord SALISBURY adverted to the origin of life as even a more striking instance of the obscurity still hanging over problems which the highest scientific intellects have been investigating for several generations. From the protyle of the chemist—the term given to the supposititious primary element of which all the other so-called elements are held to be composed, and representing the germ of inorganic matter—he passed to consider the protoplasm of biologists, the germ of organic matter. But here again the position furnished but another example of seeing through the glass darkly, and, although biology has been exceptionally active during the last half century, the triumphs achieved give as yet no steadfast hope, no definite line of reasonable expectation, that we are likely to penetrate the great central mystery. Bacteriologists will admit the truth of Lord SALISBURY'S remark (which really related to the position of bacteriology in regard to disease) when he observed that science has been more skilful in describing the ravages of micro-organisms than in devising means to hinder them. They will admit it, because it is calculated to stimulate them to wrest secrets from nature more diligently, and also because of the speaker's frank and graceful acknowledgment that there are brilliant exceptions to his criticism, as instanced in the labours of LISTER and PASTEUR, "the great glory of the past century." Medicine, the distinguished President of the British Association this year owned, as Presidents in past years have done, had continued to make conspicuous progress, and it was difficult, he added, to overrate the brilliant services rendered by the physician and the surgeon in ministering to the comforts and diminishing the sufferings of mankind.

The sharp and well-known contention on the doctrine of natural selection between Professor WEISMANN and Professor ROMANES—whose recent death we join the British Association of Science in deeply deploring—could not well be left out of an address to students of science, and Lord SALISBURY gave an admirable summary of the position as it at present stands. In referring to the mere hypothesis of the former *savant* he took the opportunity of observing that the reasons given for the position adopted by Professor WEISMANN were illustrative of the great danger which scientific research is running at the present time—the acceptance of mere conjecture in the name and place of knowledge, in preference to making frankly the admission that no certain

knowledge can be attained. "We accept natural selection," says Professor WEISMANN, "because we must, because it is the only possible explanation that we can conceive." But, said Lord SALISBURY, though valid in politics, such a line of reasoning is utterly out of place in science; while he declared himself ready to accept the situation that if natural selection is rejected we have no resource but to fall back on the mediate or immediate agency of a principle of design. In short, Lord SALISBURY in reviewing all the details of scientific progress of half a century down to the year 1894, and doing so, as we have said, in no amateur spirit, but with the authoritative voice of one who knows and has marvellously kept pace with knowledge, is constrained to repeat what Lord KELVIN said on a previous occasion—namely, that there lie around us strong proofs of intelligent and benevolent design; and that if ever perplexities, whether metaphysical or scientific, turn us away from them for a time they will recur to us with irresistible force, showing to us through nature the influence of a free will, and teaching us that all living things depend on one everlasting Creator and Ruler. The pendulum swings back.

THE case of the Chelsea Hospital for Women is one that deserves consideration in a great many respects. It is welcomed by certain people who are always strangely ready to condemn hospitals, and who find in them, and especially in their medical officers, few sentiments of humanity. These people talk as though medical men were without feelings, as if they had not wives and children, or even favourite dogs; as if their only pleasure in hospital work was in that which gave pain to their fellow creatures. It is a little hard that a profession which does more humane work than any other, and whose broad reputation for such work is traditional, should be so misjudged. We can only disregard such ungenerous critics and go on our way, fearlessly opposing physical evils with such weapons as are at our command. We do not believe that any great number of sensible people will alter their opinion of hospitals because in one of them unsatisfactory facts have been brought to light. It is not with a view to such critics that we point the moral of the Chelsea story, but rather with a view to the medical officers of hospitals themselves that they may pursue their great duties in peace. It would be intolerable to throw on these officers the treatment of the gravest cases and yet to withhold from them the fullest confidence.

We shall try to express in a few words what we may call the ethics of hospitals, an observance of which will prevent disappointment and disarm adverse criticism. One of the first duties of hospital authorities—and this applies to the lay authorities as much as to the staff—is to reject all cases of a slight nature and refer them back to their private medical attendant. Hospitals are meant for the treatment of severe and exceptional cases, and the treatment of such cases is interfered with by the admission of thousands of others that would be better treated at home. One of the severest parts of the criticism in the Chelsea case is that in which complaint is made of the use of grave surgical procedures for the cure of slight inconveniences. A second point is that in all doubtful cases, and especially in regard to all difficult or surgical operations, the principle of consultation should be much more recognised than it is. Not only should the staff of the hospital share more or less the responsibility of sanctioning and performing operations, but wherever practicable, and in all doubtful cases, the ordinary adviser of the patient should be consulted. This may seem a great deal to ask, and in many cases it would be impracticable from urgency or otherwise. But it is reasonable that as in private practice the concurrence of the regular adviser is sought the same advantage should be conceded to a patient whose circumstances compel him to go into a hospital. This precaution is of immense importance where new procedures or such as involve great functions or great risks are involved. Even where the patient is too poor to have had a private practitioner it would seem not unreasonable to associate an outside practitioner in general practice, in a consultation which is to decide such grave courses, not because he is a specialist, but because he is not one and will view such questions more in the light of the public and of one acquainted with the ordinary course of disease. The attitude of the surgeon towards such operations should rather be one of reluctance than of eagerness to operate. It is only fair to remember that much is expected of surgery nowadays. But blame will not the less be attached to it if it fails, and the surgeon owes it to his patient as well as to himself to acquire every sanction for procedures that may involve the loss of function or of life. The third great ethic is to omit no antiseptic precaution. One of the first of these is a perfectly sanitary environment, and no staff is justified in working in insanitary conditions. It would have been well if the medical staff of the Chelsea Hospital had taken their stand on this point long ago, and insisted on the rectification of its great faults. By this course of action they would have thrown on the committee much of that discredit which they have now to share with them. But over and above all this is the conscientious use, even in details, of the great antiseptic system which has revolutionised surgery. Lastly in the ethics of hospitals we must reckon as of prime importance the sense of personal responsibility to the patient of the honorary medical officers. There never was a time when our resident physicians and surgeons were more capable than now; but the patient is in the hands of the honorary officers. It is to them that the public entrust the care of cases; and the honorary officer who practically devolves that care on his house surgeon or house physician is guilty of a breach of faith to his patient, and is misusing his resident officer. These are some thoughts that occur to us in reflecting on the Chelsea case and on communications referring to it which have been sent to us. We live in a critical age, and there are many adversaries. Men who could not dress a cut finger will claim to criticise the splendid surgery which is one of the glories of the Victorian era. The surgery of the present day includes many wholly new operations—some of them brilliantly successful in the relief of agonies and in the wonderful saving of life. This surgery is also eminently conservative and care-taking. It saves limbs by the hundred as well as life. It would be unreasonable to expect such work to be done without some risks; but, as regards this element of risk, two or three things have to be said and even repeated. The risk is reduced to a *minimum;* it is infinitely less than in the

pre-antiseptic times, and it is little in proportion to the advantages offered. Again, the operations we speak of are, for the most part, practised only in the case of diseases otherwise hopeless or making life miserable and useless. The very success of such surgery has in it a temptation to excess which the best surgeon will be the first to guard against. He will be the first to recognise the wisdom of all such precautions as we have suggested, in the interest at once of the humblest patient and of the momentous art which has been so advanced in recent times. He who practises Victorian surgery without Victorian precautions is living in a fool's paradise, and is untrue both to his art and to his patient.

WE may take occasion of the return of the holiday and bathing season to remind our readers of some of the leading principles which govern the applicability of sea air and marine life to states of health and disease. The meteorological features of sea air, though necessarily varying widely according to latitude, prevailing winds, and local conditions of shelter, have certain more or less fixed characteristics. Sea air is everywhere somewhat moist, it is generally of relatively high density, it is always more or less in motion, and it is to some slight extent impregnated with saline particles; it is, on the whole, much more equable in temperature than inland or mountain air. As regards its physiological action upon the healthy organism sea air is usually tonic—i.e., it promotes the processes of nutrition; it is also very generally stimulant—i.e., an excitant of the nervous system,—but to this rule there are many exceptions. Warm and moist sea air, combined with conditions of local shelter, may even be decidedly sedative in character. There seem to be grounds for believing that sea air is always more or less provocative of metabolism and tissue change in the organism. The influence of sea air upon those who are in ordinary health is in the great majority of cases beneficial. Those who are well at home experience in most cases an accession of vigour at the sea-side; those who are languid and debilitated from over-work or long-continued strain, apart from actual illness, obtain a like benefit from sea air. On these two facts rests the justification of the very common practice of making a sojourn at some marine resort part of the ordinary programme of the year. In such cases as the above the young benefit more than the old, and growing children benefit probably most of all. The applicability of sea air to states of disease requires rather more careful consideration, and the off-hand recommendation of a marine sojourn to all sorts and conditions of patients is much to be deprecated. The neurotic, the hypochondriacal, the dyspeptic patient will as often get injury as benefit from such a prescription. The sufferer from cutaneous disease should as a rule avoid the sea. Rheumatic and gouty patients do not commonly benefit by sea air. On the other hand, strumous cases often do wonderfully well at a seaside resort, especially of the bracing type, such as Margate, Cromer, Scarborough, or Whitby. Cases of impaired convalescence after serious illness or surgical operation do well at similar resorts, provided that all acute symptoms have subsided and all grave complications have become inactive. Simple debility and anæmia also usually do well at the seaside, and so do many cases of incipient or quiescent phthisis.

Such are, in our view, the broad rules which regulate this important subject. Let us look at a few of the points in greater detail. The greatest successes of sea air are, we believe, attained in struma and in impaired convalescence from disease or operation. The *rationale* of this result is not difficult to conceive. The key to the remarkably beneficial effects of sea air in such cases is to be found in its property of stimulating tissue change, by which it tends to rid the organism of morbid deposits and to promote healthy and normal growth. Appetite is stimulated and the digestive processes are rendered more active, provided they have not become so debilitated as to fail to respond to the tonic properties of sea air. The good effects of sea air in anæmia and debility are not difficult to understand. The freshness and purity of the air, the breeziness, and the large average of sunlight are a sufficient explanation. The effect of sea air upon the nervous system is a much more complex question, to which sufficient attention has hardly been directed. It is a matter of common observation that in some cases the nervous system is rendered more irritable by sea air, with resulting insomnia, nervous debility, and the like; while in other cases sea air produces unusually deep and refreshing sleep and a general sense of *bien être*. In some cases, again, the effect of sea air is at first excitant and subsequently sedative. These differences can hardly be attributed to idiosyncrasy. Much depends upon the special characteristics of any particular resort, prevailing winds, shelter, &c. The safe general rule seems to be that where there is much irritability, particularly of the sort that may be termed "irritable weakness," sea air disagrees. Where the nervous system is simply torpid or debilitated, without decided irritability, sea air will often be found beneficial. Hence, sea air is contra-indicated in hysteria and in most forms of insanity; it is often indicated in nervous debility, especially when due to overwork or the wear and tear of a tedious illness.

The effect of sea air upon the digestive organs is also somewhat complex and cannot be summed up in a sentence or two. In simple atony of the stomach and bowels its effect is usually beneficial. In cases where the liver seems to be involved, where there is a muddy or slightly jaundiced complexion, a deeply furred and brownish tongue, and scanty, high-coloured urine, sea air often does harm. It is probable that in some cases of chronic dyspepsia sea air is injurious by stimulating the appetite before the stomach and bowels have recovered sufficient activity to be able to dispose of the increased amount of food consumed by the patient. In such cases a regulated abstemiousness is indicated. The ill effect of sea air upon many chronic cutaneous diseases, especially chronic eczema, is a well-established and highly important fact, of which we are not aware of any certain explanation. It may be conjectured, however, that the fresh sea winds, with more or less of saline impregnation, act simply as irritants to the cutaneous surface. It is not improbable that some constitutional factor may also have its effect. The beneficial action of sea air upon incipient or quiescent phthisis is probably simply due to its tonic properties and to the fact that life at the seaside is usually conducive to habits of simple living and healthy out-door

exercise which are so important to those suffering from phthisis. The amount and stage of the disease, constitutional peculiarities, and season of the year must be taken into account in selecting for the phthisical patient either stimulating marine resorts such as San Remo, Malaga, Hastings, or Cromer, or such sedative resorts as Arcachon, Madeira, Torquay, Falmouth, or Glengariff. Another broad rule that may help in deciding for or against the seaside is the well-known fact that all inflammatory conditions tend to be aggravated by sea air.

MUCH information of practical interest is contained in the returns of railway accidents issued by the Board of Trade for the three months ending March 31st, 1894. A total of casualties amounting to 298 persons killed and 2211 injured within this period may well excuse an inquiry into their causes and the means of their prevention. No class is without some concern in the findings of this report. The traveling public may take warning from the concise but instructive history of some 250 cases in which passengers or other persons not railway employés have been killed or injured. We learn from it that 9 deaths and 13 cases of injury are attributable to falls between railway carriages and platforms, and that 16 persons have been killed and 3 injured at crossings on lines; while no fewer than 100 trespassers have suffered for their rashness, 64 being killed. As regards the circumstances under which railway servants have sustained injury, we note 6 deaths and 80 cases of injury incurred while coupling and uncoupling waggons &c., and no fewer than 49 deaths and 276 injuries during shunting. Accidents while attending to machinery &c. of engines number 115. Official investigation into nine collisions shows that railway companies, as well as their servants, have been to blame for their occurrence. There is still a tendency on some lines to make men work for unreasonably long hours; signals are liable to be conveniently ignored in the speculative hope that no harm will result, and occasionally, though rarely, these have been found to be defective. The chief lesson to be deduced from the results of inquiries into this subject appears to be that expressed in the words of a report by Major MARINDIN—namely, that neither block working nor any other system, even the very best, is an absolute safeguard in itself, but that as much care must be taken to observe (and of necessity to obey) signals as if such systems were unknown. The report, however, as a whole abounds in suggestions more or less important. It is a noticeable fact that the number of casualties, and especially of reported injuries, varies within wide limits even upon lines approximately equal in extent. Irish railways enjoy a remarkable immunity, the whole number of accidents amounting to 11, while there were 17 deaths of employés on more than one English line. The list of non-fatal accidents varies likewise with the names of companies in a somewhat erratic manner. These disparities may, no doubt, be accounted for partly by variations in the amount of traffic, and partly also by a difference in the methods pursued in reporting the less serious forms of accident, the terms of the Railways' Regulation Act with reference to this matter being somewhat vague. The frequency of accidents of a dangerous character due to preventable causes is somewhat remarkable. In the case of employés the fatality attending coupling and shunting operations is noteworthy, nor is it easy to say in what other way this can be reduced than by the stricter exercise of personal caution. The temerity of passengers has much to answer for. Trespassing, entering or leaving trains while in motion, haste in mounting or descending stairs, may be each and all most natural on occasion, yet they cannot on this account be excused even in the most privileged travellers. The non-liability of companies in all cases of injury from such causes cannot in ordinary circumstances be too strongly insisted on, though a valid ground of complaint against the latter exists when, as happens now and then in the bustle of delayed traffic, insufficient time is allowed at stations for entrance or exit from the railway carriages. A list of sixteen deaths at railway crossings very strongly suggests the necessity of increased bridge or subway construction. However economical and convenient, nothing can bear a more suicidal aspect than the deliberate formation of an ordinary roadway across the very paths of train service. Even on rural lines there should be no great difficulty in providing a suitable subway at any newly made station, if only this were recognised as an essential part of the primary structural arrangements. The fact that the majority of the more serious accidents officially investigated were attributable to the neglect of railway servants is full of suggestion. It reminds us in the most practical way of the responsibility which constantly rests upon these men and the necessity that they should be fully qualified for duty both in point of intelligence and of character. It is advisable on every ground to secure for the public the best service obtainable for functions of the most critical character, even though this should entail a somewhat increased outlay on wages or a needful redistribution of working time.

Annotations.

"Ne quid nimis."

THE COST OF THE METROPOLITAN ASYLUMS BOARD.

IT is difficult to judge of the outlay of the Metropolitan Asylums Board as a whole and of its disposal over so many institutions and such multifarious purposes, without the power which provincial authorities have of recovering from those who can pay the cost of their accommodation. Like other items of local expenditure, it excites no interest in Parliament, which is far too keenly occupied with the discussion of party questions to consider the business aspects of its work. It is the more necessary, therefore, to notice every contribution to an understanding of the great system by which our infectious diseases are treated and isolated. Such a contribution is to be found in the annual report of the medical officer of health for Islington just issued for 1893. Mr. Harris had occasion to complain that during the height of the epidemic the fittest cases were not always admitted, and that this great parish of 319,143 persons was practically getting no patients admitted. The children of the well-to-do were removed when cases recommended by the public authority were by no means certain of accommodation, even when there was a vacant bed.

This is the evil that we have always tried to expose, and that the Member for East Islington has made the subject of many questions in Parliament without ever getting any satisfactory answer. Mr. Harris specifies many hard cases, as where mothers were about to be confined and the case of scarlet fever was being treated in the same room, cases in families of seven or eight living in two rooms, or even *one* room, &c., where accommodation had to be denied. His point is that the cases put forward by the Public Health Department should have the preference. It is monstrous that the well-to-do should have cases in their families admitted gratuitously on their own application or that of their medical man while such cases as Mr. Harris describes are unaccommodated. The vestry memorialised the Board, but the managers passed a resolution that they saw no way of restricting the applications or adopting any other method of selecting cases. The Board is not so much to blame as Parliament, which has recklessly dealt with this question, and in doing so receives no guidance from the Local Government Board. Yet it will scarcely be believed that for the accommodation of the Board's hospitals the parish of Islington pays no less than £20,000 per annum, or something over 3*d*. in the pound. Mr. Harris says that for this sum they could manage and build "splendid hospitals of our own," but unfortunately "we cannot come out of the Metropolitan Asylums Board." Doubtless the case is one for joint action and equalisation of rates. But the use of these institutions by those who can obtain proper isolation at home is a scandal to be inquired into.

THE DIFFUSION OF SMALL-POX.

WHAT at one time threatened to become a severe epidemic of small-pox—that, namely, at St. John's-wood—has, it would seem, been cut short within a very few days of its outbreak. The cases newly arising last week never exceeded five on any one day, the total for the week failing to reach that of many of the single days of the preceding week. All concerned are to be congratulated on the manner in which they have worked in their successful efforts to save the metropolis the misfortune of a small-pox epidemic. There were last week three deaths from the disease in persons belonging to the parish of Marylebone. The temporary stations opened for gratuitous vaccination in the district—two in number—have done good service, some 1700 persons having availed themselves of the opportunity thus and in other ways afforded for securing protection against the malady. The outbreak has been the most serious one which has occurred in London since 1885, and even then there was no such localised outburst. Sir E. Galsworthy has expressed his pleasure at the way in which the disease has been confined within narrow limits, and said that great credit is due to those responsible for the manner in which cases have been removed and isolated. The magnitude of the task would, he thought, be best understood if he stated that the removal of a patient from Marylebone necessitated a journey of twenty miles for the ambulance. The occurrence has shown the importance of arrangements being made in advance of the actual requirements of the moment. This refers especially to the nursing staff, for had there been no staff beyond that required at the time serious results might have ensued. The rest of London has suffered somewhat more than the normal of the past few weeks, the cases amounting last week to 53, and the end of the week finding 197 patients still under treatment in the institutions of the Metropolitan Asylums Board, in addition to 18 in the Highgate Small-pox Hospital, making 215 against 207 on the preceding Saturday. One death occurred in Paddington and 1 in St. Pancras. Outside the administrative county a death took place at Willesden. In the provinces, with the exception of some two or three towns, small-pox seems to be now held in check. At West Ham, at Bristol, at Wolverhampton, at Walsall, and other Western and Midland places the disease is either entirely absent or is present in small amount only. At Willenhall the disease has, however, continued to make headway, there having been some 90 attacks in the last fortnight of July. Birmingham, whilst not free, has managed to keep its small-pox cases under a score each week recently; last week 1 death happened. Manchester and Salford, each with only one case last week, are to be congratulated on the way in which recent occurrences of the disease have been isolated. The news reaching us from Yorkshire is equally reassuring, the towns invaded having but few cases—many only single attacks. In Dublin 3 patients were removed to the Hardwicke Hospital during the last week of July. The first death in the present limited epidemic took place recently, the deceased being a boy aged three years and unvaccinated. It is the only death from small-pox recorded in the Dublin registration district since March, 1882.

THE SHAFTESBURY AVENUE MURDER.

AT the Central Criminal Court on July 28th Paul Kuzula and George Schmerfeldt were convicted of the murder of Matilda Rasch on May 25th at 167, Shaftesbury-avenue and were sentenced to death by Mr. Justice Lawrence: Kuzula for having committed the crime and Schmerfeldt as an accessory before the fact. Susannah Kuzula, the wife of the former convict, was acquitted. The Kuzulas were waiters employed by Mr. Rasch, the husband of the murdered woman, and Schmerfeldt, who was also a waiter, was well known to all the parties. From the evidence it was clear that the Kuzulas had made arrangements for leaving Shaftesbury-avenue, as some days prior to the murder their boxes had been removed and rooms had been taken for them by Schmerfeldt. Moreover, they decamped immediately after the murder and when arrested were found in possession of such sums of money that people in their position were not likely to have. Mr. Rasch had been robbed of money and other things. On the night of the tragedy Rasch and Schmerfeldt went for a walk and on their return the dead body of Mrs. Rasch was found with the legs tied together. Life had been extinguished by suffocation. From the evidence it would seem probable that more than one person was concerned in the murder. It appears clear that robbery was the motive for the crime, and that there was a conspiracy between Kuzula and Schmerfeldt to effect it, but whether they intended to murder the unfortunate woman or were merely reckless of her fate is not certain. Most likely theft was the primary object and to prevent Mrs. Rasch raising an alarm suffocation was resorted to. Mr. Justice Lawrence ruled that if Schmerfeldt counselled and procured the commission of the robbery and was not averse to the taking of life if such desperate means became necessary he would be an accessory before the fact and thus responsible for the murder, the consequence of an unlawful act. If he merely contributed to the robbery without any expressed or intended acquiescence in the murder he would not be guilty of the capital offence. The jury adopted the former view. That Schmerfeldt was an accessory after the fact, inasmuch as he harboured Kuzula and his wife, is beyond question. It will be remembered that in the Wainwright case the murderer's brother was convicted of being an accessory after the fact, he having assisted in the attempted disposal of the remains of the body of the victim—Harriet Lane. For his participation in the crime he was sentenced to five years' penal servitude. If Schmerfeldt had any part in the murder of Mrs. Rasch, either direct or by assent, he certainly deserves to suffer the extreme penalty of the law; nevertheless, to our minds his case calls for careful reconsideration.

In the Penge case four persons were convicted and condemned to death, but acting upon the opinion of a committee of judges the Home Secretary advised Her Majesty to grant a free pardon to one of the convicts and to commute the sentence on the others to penal servitude.

SENSATION IN THE TWO SEXES.

DR. DEN of Iurieff (Dorpat) has published a graduation dissertation in German on the comparative sensitiveness of the skin and taste in men and women in different classes of life, in which he shows that Lombroso's view that all kinds of sensation except that of pain are better developed in men than in women is incorrect. He himself has employed more delicate methods of investigation, and finds that the sensitiveness to temperature and to electrical currents, and of taste is greater in women than in men both amongst educated and uneducated people; that the sense of locality, as determined by Weber's compasses, is better developed amongst uneducated women than amongst uneducated men; but that amongst educated people it is the same for both sexes. The sensation of pressure is also the same for both sexes. Amongst educated men all forms of sensation are better developed than in the uneducated; in the case of women, however, education seems to make but little difference in the sensation, though pain is felt from the induced electrical current sooner by uneducated than by educated women.

PROFESSOR VIRCHOW'S ACTIVITY.

THE Rector Magnificus of the University of Berlin is one of the most versatile of living *savants*. According to Professor Huxley it takes three specialists in science to do him justice when proposing his health at such a banquet as that at which the profession entertained him the year before last in London. Nay, a fourth auxiliary in that genial operation—say, the president of an alpine club or the Dean of Queen's Messengers—might well be required, if only to render the meed of praise due to his indefatigable activity. Let us consider what this septuagenarian has pledged himself to perform as part of his summer holidays. First, he will repair to Stockholm to take part in the "Americanisten-Congress"; next, he will appear at Innsbrück as the most conspicuous figure at the Congress of Anthropologists; thirdly, he will assist, *primus inter pares*, at the "Naturforscher-Congress" in Vienna; fourthly, his presence will be one of the chief attractions at the Hygienic Congress to be held at Budapest; and, finally, he will close his scientific itinerary by entering an appearance at the Bosnian Archæological Congress, which is to meet at Serajewo. And not only will he leave those assemblies the richer for his participation; but he himself will profit by the experience, ascribing as he does to such periodical encounters with younger minds the re-invigorating effects which explain his phenomenal vitality. At the age of seventy-three the *savant* is prone to leave the race to the swift and the battle to the strong; Professor Virchow, however, finds that "grande mortalis ævi spatium" only an occasion for fresh triumphs in the arena, and for demonstrating that old age has other pleasures than those mentioned by Cicero.

DISEASED ANIMALS IN LONDON.

A CORRESPONDENT in the *Morning Post* of the 14th inst. very properly calls attention to the existence of contagious diseases among animals, and to the complex and confusing orders in Council and Acts of Parliament which have been introduced to get rid of them. We noticed recently that the Minister of Agriculture had introduced a Bill to mend and consolidate the unintelligible Contagious Diseases (Animals) Act, but through stress of circumstances the Bill has been dropped and matters remain as they were—that is, the present Act is almost, we are told, a dead letter, and no one outside the Board of Agriculture has ever professed all the complicated and detached orders and regulations, some of which are enforced by the Board, some are carried out by local authorities, while others are paid no attention to. A local authority in Lincolnshire, for instance, has lately declined to put in force the new regulations for the suppression of swine fever—a disease that threatens to cost the taxpayer as much as did the cattle plague thirty years ago; but a more glaring instance is to be found in the attitude of the London County Council, which has resolutely declined to enforce the orders relating to glanders—a contagious scourge that every year causes the death of about 2000 horses, ruins poor horse-owners by the dozen, and occasionally kills human beings, who are infected by the diseased horses. Two years ago the Minister of Agriculture, when urged to adopt energetic measures, promised to move in the matter, and on the advice of his professional advisers, the 1892 order was issued. But, as has just been stated, the London County Council declined to act upon the order, so it had no result. About six months ago the Council persuaded the Minister to grant them a new order; this he did, and they again refuse to enforce it. The correspondent asks how long a county council shall be allowed to dictate to a Government department, and what special knowledge the Council possesses that enables it to know better than the Board of Agriculture what regulations are necessary to stamp out the contagious diseases of animals. It appears that the Council depends for advice upon its Cattle Diseases Committee, but not a man of that body can be said to have special knowledge of the subject, except what he may pick up from outside irresponsible individuals who may know as little, certainly there is no evidence that the Council is led or moved by intelligent advice based on experience of glanders, and the sooner it is made to understand this the better it will be for the public in general, and the ratepayers in particular, who are annually mulcted in an annual charge of £6000 for trifling with a dangerous disease. It is high time that the Council should desist from this line of conduct, and the Board of Agriculture should insist upon its orders being carried out. The Council is plainly acting under erroneous advice, and causing a heavy loss of money and animal life and at the same time imperilling the public health.

THE KIMBERLEY HOSPITAL.

WE have recently been made acquainted with some details of the internal management of the hospital at Kimberley which show the necessity for a revision of regulations if that hospital is to maintain the reputation that it is currently supposed to have. A state of affairs has been revealed, through the resignation of Mr. Draper Bishop after a brief tenure of his office as senior house surgeon, which does not do credit to those in authority. From a letter sent to us by Mr. Bishop, and also from the perusal of articles and correspondence that have appeared in the local press, it is clear that the board of management have vested the matron of the hospital with powers which we venture to say are unexampled in respect to a similar official in any like institution. This lady, who has held her post for twelve years, has not only sole control of the nursing department—for the maintenance of which she is granted an annual subsidy of £2000,—but has also the power of directing affairs connected with the patients which have to do more with the medical than the nursing authority. The matters in themselves may not seem very important, yet no one can uphold a practice which enables a nurse to compel a certain dietary for the patients on one day in the week, or to keep the register of cases, or to take upon herself the task of deciding when the condition of patients is such as to necessitate the summoning of their friends to the bedside. Mr.

Bishop, like his predecessor, Dr. Ashe, recognising the impossibility of working harmoniously under such conditions, laid the matter before the chairman of the committee of management, Mr. Judge, whose reception of his statements was so repressive that Mr. Bishop felt constrained to resign. The committee hastened Mr. Bishop's departure from the hospital by offering him a gratuity in lieu of notice, and the result has been that the management have been severely taken to task by the public press for having practically shut the door to any inquiry into the state of affairs. It is clear, however, that the matron, of whose capacity there can be no question, is a lady who, from holding a position of greater security and permanence than a house surgeon, has taken far more into her hands than she is entitled to, and that her excess of zeal and mistaken ideas of her duties render it very difficult for any medical officer to carry out his own work efficiently. That such a state of things should be tacitly approved of by the committee—which in other ways has shown very little grasp of the affairs of the institution—is deplorable and should not be permitted to continue.

DEATH UNDER CHLOROFORM.

AN inquest was held on July 28th upon the body of a woman recently a patient at the Samaritan Free Hospital. The patient, aged thirty-one, was to undergo an operation by Dr. Bantock, and for that purpose chloroform was given by Mr. Stormont Murray, the anæsthetist to the charity. The evidence showed that that gentleman examined her carefully, and, although finding her in a very weak condition, yet considered her capable of taking chloroform. In two or three minutes after commencing the anæsthetisation the patient suddenly "gasped" and ceased to breathe. Artificial respiration carried on for half an hour failed to reanimate the patient. It was stated that about half a drachm of chloroform had been taken. We believe the chloroform was exhibited by Dr. Junker's inhaler. The death was said to be due to syncope, and the surgeon in charge stated it as his opinion that the poor woman could not in any case have lived for twenty-four hours. Whether the A.C.E. mixture would not be better for patients in such a very feeble state is, of course, the first thought of those who read of such melancholy events. It seems doubtful whether the respiration was not also at fault, but the condition of the patient no doubt rendered her chances very bad. It would be interesting to know whether any inversion or other measures were tried, such as are usually employed when it is believed that cardiac syncope rather than respiratory failure is imminent.

JUBILEE OF THE UNIVERSITY OF HALLE.

PRUSSIAN SAXONY, which for education and enlightenment has long been conspicuous in the Fatherland, was on the 2nd inst. employed in the congenial task of celebrating the 200th anniversary of one of her most honourable institutions, the University of Halle. Of her four faculties there is none that has not laid the twin republics of science and literature under memorable obligations, theology, no doubt, with the epoch-making names of Gesenius and Tholuck, leading the van, but medicine following at no long interval with an array of representatives whose traditions are worthily sustained by pathologists like Weber, psychiatrists like Hitzig, ophthalmic surgeons like Graefe, and pharmacologists like Krahmer. By common consent of the delegates from sister universities the commemoration of the 2nd inst. was a brilliant success, due partly to the liberal dispositions of the Senators and the Municipality, partly to the cordial participations of the royal house of Saxony, and of the Kaiser William himself. The all-accomplished Prince Albert was the spokesman on the part of the Imperial and Royal Government, and his eloquent "Glück auf!" was felicitously acknowledged by the Rector, Professor Wilibald Beyschlag. Then followed the congratulations of the sister seats of learning and the scientific and literary associations, German and foreign, and these having been gracefully responded to by the Rector, a long series of gifts to the University were announced. We may signalise among them the fine portrait of the Kaiser William, which takes its place in the aula magna beside those of the Prussian Kings, his predecessors; the magnificent gymnastic hall for the students, furnished with every appliance for physical development, presented by the architect F. Kuhnt; the very valuable microscope, bestowed by the Hartnack firm in Potsdam on the anatomical institute, to say nothing of the liberal subsidies, headed by the Kaiser, for the promotion of scientific research. The festivities, which the situation of the town on the Saale rendered peculiarly effective—a flotilla of sixty boats on the river forming a peculiarly picturesque feature—were throughout in happy keeping with the statelier incidents of the programme, and illustrated once more the harmonious relations that have always subsisted in Germany between "Town and Gown," to the conspicuous advantage of both. Not the least notable item of the proceedings was the unveiling of the statue in front of the royal surgical clinique to Saxony's great surgeon and poet, Richard Leander. This, a life-like statue in marble, is the work of Arthur Volkmann of Rome, himself a kinsman of that Richard von Volkmann at whose instance the monument was projected, and whose successors have carried on the good work he contributed to the advancement of the University as a surgical school. All Germany, in its medico-chirurgical representation, took part at the unveiling—König of Göttingen and von Bergmann of Berlin, in the name of the societies over which they preside, depositing a laurel wreath at the foot of the statue. The entire commemoration was a happy instance of the hold which their academic institutions retain on the Teutonic people, and gives earnest of yet further achievements in addition to those already wrought by their sons on the pathway whose portals are inscribed with "Onward and Upward."

SIR JOSEPH FAYRER AND NETLEY.

WE believe that we are correct in stating that the occasion of the distribution of the prizes and delivery of an address by Dr. Weir Mitchell at the Army Medical School, Netley, was the last occasion of the kind at which Sir Joseph Fayrer was to be officially present. It is well known that the school is much indebted to him for the great and sustained interest he has always taken in it, and for the really valuable services he has rendered it. Sir Joseph Fayrer's career has been a very varied and distinguished one, not only in his profession and in science, but in services rendered under circumstances which fall to the lot of few people, and which have become a part of the history of this empire during the present century. We allude especially to the part he played in the Indian Mutiny of 1857 and the defence of Lucknow. It was in Sir Joseph Fayrer's house, when he was Residency surgeon of Lucknow, that Sir John Lawrence died. Whilst residing in Calcutta and acting as Professor of Surgery in the Medical College of Bengal and surgeon to the hospital, Sir Joseph Fayrer was distinguished for his boldness and skill as an operator and for his open-handed hospitality. His keen love of natural history and field sports is well known, and it was the reputation which he enjoyed in these respects, as well as his Indian experience and professional attainments, that contributed, no doubt, to his being selected to accompany the Duke of Edinburgh, and subsequently the Prince of Wales, in their visits to India. Sir Joseph Fayrer has always been loyal to his profession; he has never neglected an opportunity

of advancing its interests or of upholding its dignity, and he has always zealously supported what he considered to be the rights of the medical services. It is in these respects more particularly that his retirement will be a great loss, for he has always had the courage of his opinions, and his name and position frequently gave him an opportunity of doing services to institutions and to medical officers and others the source of which they probably never traced.

"A DEVONIAN HEADLAND."

FEW duties could be less poetic than those appertaining to the office of Registrar to the General Council of Medical Education, yet Mr. W. J. C. Miller contributes a paper to the August issue of *Nature Notes* full of poetic thoughts and subtle observation, reminding the reader in no distant manner of the delightful epistles addressed by the Rev. Gilbert White to Mr. Thomas Pennant. The paper is entitled "A Devonian Headland" and describes a charming and peaceful nook within the great west bay of Dorset and Devon, touching on its associated poetic and historic memories, and particularly its bird-life. "Chalcombe," as Mr. Miller calls his little vale of Avilion, is one of the places that has suffered much from the sportsman. In the old days we might have watched the swift and brilliant flight of the kingfisher, or have noted the stately heron standing over his stream. It would have been the ideal spot for investigation into the arrival and departure of our migrants; but, according to Mr. Miller, the destroying gun has altered much of this, though a general landscape remains of—

> "Rocks, crags, and knolls, confusedly hurled,
> The fragments of an earlier world,"

able to repay its visitors amply. Very near to the sleepy little hamlet lived Wordsworth and Samuel Taylor Coleridge; while readers of "Pendennis" are already acquainted with it under the name of Clavering St. Mary. With proper respect for a spot which has evidently attracted him deeply, Mr. Miller has suppressed the real name; and we respect his reticence. But a very little trouble will enable those to whom scenery and peace are sufficient attractions to provide a holiday to discover the readiest way to "Chalcombe."

ANDERSON v. GORRIE AND OTHERS.

WE anticipated for Mr. R. B. Anderson ill-success in his appeal from the decision of the late Lord Chief Justice in the case of Anderson *v.* Gorrie and Others. We need not here particularise his causes of grievance against the Supreme Courts of Trinidad and Tobago—we have in a very recent issue placed before our readers the points which we consider entitle Mr. Anderson to the sympathy of all his professional brethren and it is possible we may do so again; but we desire to express a certain amount of wonder at the position in which the law of our land leaves him, as accentuated by no less a person than Lord Esher, Master of the Rolls. A jury awarded Mr. Anderson £500 damages against Mr. Justice Cook, whose judicial powers they held had been maliciously overstrained. The late Lord Coleridge, before whom this verdict was given, found that it would not stand as against a judge of the Supreme Court, and gave judgment in the defendant's favour. It is the appeal against Lord Coleridge's judgment which has just been dismissed, and to our mind dismissed with most significant words. The Master of the Rolls, while pointing out and dwelling upon the fact that the power of the defendant judges had been used maliciously, found that it was clear that no action could lie against a judge of a Superior Court for any act of his in the performance of his office, and that it was for the public benefit that this was the case. We do not raise exactly a protesting voice against what is apparently an interpretation of the law of the land; but no one who reads Lord Esher's remarkably outspoken claim for his order in connexion with the equally outspoken comments on the late Sir John Gorrie can fail to deeply sympathise, as we do, with Mr. Anderson.

CHOLERA ON BOARD THE STEAMER "BALMORE."

ON inquiry at the Local Government Board, made just before going to press, we were informed that it had not been thought necessary to send an official from that Office to investigate the cases of cholera which have been reported from the Dundee steamer *Balmore*. This vessel sailed from St. Petersburg on July 31st, and was five days at sea before the sailor who subsequently died of cholera was attacked. The most important part to be recorded is that Dr. Klein has diagnosed the case of the man who died as one of Asiatic cholera, and also has said that one of the other non-fatal cases is of the same nature. At the Port of London Sanitary Office the man's name has been received as Erichsen. He was thirty years of age and a Norwegian by birth. He was attacked on Aug. 5th, the symptoms showing themselves between 8 P.M. and 12 P.M. He had slight diarrhœa on the evening of the 5th and became worse during the night. The captain of the *Balmore* was first informed of his condition at 8 A.M. on the morning of Aug. 6th, when, as the patient became rapidly worse, the vessel put into Aldeburgh for medical advice. The man died the same day. The *Balmore* arrived off Gravesend at 4.35 A.M. on the 7th and the body was taken ashore. Four others of the crew showed some suspicious symptoms of the disease and were removed for observation.

WATER-BORNE TYPHOID FEVER AT LUSTLEIGH.

LUSTLEIGH is a singularly picturesque village situated in one of the most beautiful parts of Devonshire, and a large number of visitors reside in and around it during the season; in fact, it may be regarded as a health resort. These considerations render the existence of typhoid fever in the village all the more deplorable, more especially so for those of the inhabitants who earn a livelihood by letting lodgings. The present season has, it appears, been a disastrous one, all the lodgers and visitors having left. The fact that the first case of the disease was imported does not, unfortunately, exonerate the village from its share in the outbreak, since several of the later cases were apparently caused by the drinking of water from a small stream which had been polluted by the first case. We cannot but feel sorry for the residents of Lustleigh, but at the same time it would be useless to deny that the blame rests in large part upon their shoulders, since they should have taken warning from an outbreak of typhoid fever which occurred a few years back, and which was apparently traced to the consumption of water from the stream just referred to. The remedy, however, is a simple one, and a plentiful supply of pure water can doubtless be obtained at a comparatively small cost from the surrounding hills. The sooner this reform is carried out the better it will be for the people of Lustleigh in particular and for the holiday-makers in general.

THE DIAGNOSIS OF DIPHTHERIA.

IN discussing the necessity for the prompt recognition of diphtheria Dr. Francis Allan, medical officer of health for the Strand District, refers, in his annual report for 1893, to the arrangements which have been made by the New York Health Department for the diagnosis of the disease by bacteriological examination. Dr. Allan advocates the adoption of the New York methods in London, and he suggests that the Metropolitan Asylums Board should make arrangements for the supply of culture tubes and the carrying out of the necessary cultivations. Supplies of tubes could, he thinks,

be kept at the offices of local boards and be given to medical practitioners on request. The inoculated tubes would then be sent to the bacteriologist, and the result of the cultivations forwarded to the practitioner through the medical officer of health. Dr. Allan also advocates, having regard to the discoveries of MM. Roux and Yersin, that no convalescent from diphtheria should be allowed to mix with the public until his throat has been demonstrated by bacteriological examination to be free from the bacillus of the disease. The New York example is, in theory, no doubt a good one; but we are afraid the time is hardly ripe for its application. The positive evidence which bacteriological evidence might furnish would no doubt be most valuable, but it is probable that negative bacteriological results might often lead to persons still infectious being allowed out of isolation. The inoculation of a culture tube from a throat affected with diphtheria is not such a simple operation as to justify the conclusion that it would always be efficiently performed by practitioners necessarily unskilled in bacteriological methods.

IN connexion with the two-hundredth anniversary of the University of Halle, whose jubilee celebration was, as we have said, carried out last week, the local journal has issued a "Festnummer," containing much detail of historical and academic interest. The "Alma Mater Fridericiana" has had, in medicine as well as in the other faculties, an exceptionally honourable record, the heroes of which are effectively set forth, by illustration and letterpress, in the tastefully got-up publication referred to.

DR. THEODOR KOCHER, Professor of Surgery in the University of Berne, whose brilliantly celebrated jubilee was reported in THE LANCET rather more than a twelvemonth ago, has just declined an urgent invitation to fill the chair of Clinical Surgery in the University of Strassburg, on the ground that he wishes to devote his remaining energies to the interests of his native school. For this patriotic act of abnegation the Cantonal Government has accorded him a vote of thanks.

ON Wednesday, Aug. 1st, at a meeting of the Council of University College, Dundee (St. Andrews University), Dr. John Yule Mackay was appointed Professor of Anatomy to the College. Professor Mackay, who at the time of the election was Senior Demonstrator of Anatomy in the University of Glasgow, succeeds Dr. Andrew Melville Paterson, the new Professor of Anatomy in University College, Liverpool (Victoria University).

THE Eighth International Ophthalmological Congress was opened at Edinburgh on Tuesday last under the presidency of Dr. Argyll Robertson. Among the foreign members of the Congress who took part in the proceedings were Professor Snellen of Utrecht, Professor Knapp of New York, and Professor Grut of Copenhagen.

AN International Health Exhibition at Boulogne, to which we referred in a recent issue of THE LANCET, was opened on Tuesday last. The gardens of the old Casino have been utilised as a site, and a fairly comprehensive collection of hygienic and sanitary apparatus is on view.

BRIGHTON and its hospitals are to be congratulated upon the result of the Hospital Saturday Collection this year. The sum received by Alderman Dr. Ewart was no less than £1556 18*s.* 6*d.*, a result which is ahead of all previous records.

SIR SPENCER WELLS has been elected an Honorary Fellow of the American Surgical Association.

Pharmacology and Therapeutics.

THE BRITISH PHARMACOPŒIA.

IN connexion with the subject of the Imperial extension of the British Pharmacopœia, replies to the proposal of the General Medical Council to extend the usefulness of the work to the Colonies and India have been received by the Council through the Colonial Office from the Bahamas, Barbados, Bermuda, British Honduras, the Cape of Good Hope, Cyprus, Jamaica, Malta, Queensland, St. Helena, Sierra Leone, South Australia, Tasmania, Western Australia, and Zululand, and replies from other colonies are expected. A representative from Canada has visited London, and has had interviews with members of the Council on the subject. In all cases the proposal of the Council has been accepted. In some of the colonies neither climatic nor other conditions point to any special adaptations of the British Pharmacopœia, but offers are made to collect and forward any desirable information; in others, medical and pharmaceutical committees have been appointed to consider and report on the matter; in some colonies the prevailing high temperature leads to requests for ointments of commensurate melting-point, for extracts having the minimum of moisture, and for pill-masses less liable to become hard. The omission of costly drugs that are without special advantages and can easily be substituted is recommended in some of the communications. Several suggestions concerning individual preparations are made. Most of the valuable indigenous materia medica seems, as might perhaps be expected, to have already found its way into the British Pharmacopœia.

PRESCRIPTION WRITING.

A sad and fatal accident lately occurred in a London hospital. A nurse administered an ounce and a half of a preparation of chloral instead of the prescribed dose—a drachm and a half; and at the inquest it was explained that she had mistaken the sign employed in the prescription. The symbols are sufficiently alike, especially if carelessly written, for such a mistake to be readily made by a tyro; but the case suggests awkward reflections. Chloral is so commonly employed that this error points to a great want of thought or to lack of experience, not only in reading prescriptions, but also in administering this particular drug. The routine dose of most mixtures in use in a ward is undoubtedly an ounce; hence a little extra pressure of work, or a lack of familiarity with the properties of chloral, renders such a misadventure only too likely to occur. Would it not be well, as a general rule, for all ward mixtures to be kept in the dilute form, so that the dose might be constant? Or would it not be well for sleeping-draughts to be administered only by experienced nurses, with whom such an error should be an impossibility?

RECENT DRUGS IN OPHTHALMOLOGY.

Mr. T. J. Bokenham, Research Scholar to the British Medical Association, read in the Section of Ophthalmology at the Bristol meeting the results of an interesting investigation into the action of three new drugs—scopolamine, tropacocaine, and hyoscine—and said he found them all useful in ophthalmic practice. Scopolamine was introduced in 1889 from Germany as a new and cheap substitute for atropine. It was obtained from the rhizome of scopolia carniolica, which was said to yield almost pure hyoscyamine. Later researches, however, proved that the alkaloid, though similar in nature to hyoscyamine, was not identical with it. Testing it upon himself, doses of 100th of a grain had practically no effect, producing certainly no dryness of the throat or excitement. On the rabbit and cat, under anæsthesia, the effect on the carotid pressure was but slight, the inhibitory action of the vapour not being abolished even by very large doses. The heart-beats were increased in rapidity by the large doses, but the respiration was practically unaffected. The effect on the eye was marked. Solutions of the strength of 1 in 1000 proved powerfully mydriatic, two or three instillations being sufficient to completely paralyse the iris and abolish accommodation. The paralysis of accommodation lasted for about one day and a half, the pupil being normal within three days; no unpleasant effects accompanied this action. Mr. Bokenham has found hyoscine hydrobromate useful in similar cases to those in which atropine may be employed with success. Its action is rapid and complete, and is specially useful to enable an examination to be easily made of the condition

of the peripheral portions of the lens in cases of suspected cataract. The mydriasis is of fairly short duration, longer than that produced by homatropin and shorter than that of atropine. He now employs tropa-cocaine in all cases where it is desired to produce anæsthesia without dilatation of the pupil.

SALUMINUM IN OZÆNA.

The term "saluminum" is applied to two compounds of alumina with salicylic acid which have been used clinically with good results by Dr. Heymann of Berlin: one is almost insoluble in water and is called according to the German nomenclature aluminum salicylicum; the other, which is soluble in nine parts of water, is aluminum salicylicum ammoniatum, and the solution gives a neutral reaction. The effect of these substances is highly astringent. They stimulate the mucous membrane also, and are especially valuable in affections of the mouth and nose. Insufflation of the insoluble, or, better still, of the soluble, saluminum is most useful in ozæna, and in cases of catarrh of the mouth a solution of twenty parts of ammoniated saluminum in thirty of water and fifty of glycerine forms a valuable paint for applying to the affected part.

ALLEGED INCREASE OF INSANITY.

IT is impossible to avoid a sense of disappointment at the forty-eighth report of the Lunacy Commissioners considered as a contribution to the study of that important problem—the alleged increase of insanity. Little attempt has been made in the report to utilise the useful facts bearing upon this problem which were published last year in the report upon the census in 1891. Census statistics show that, of the total enumerated cases of insanity in England and Wales in 1871 17·7 per cent. were not officially known to the Lunacy Commissioners, that in 1881 this reserve of cases unknown to the Commissioners had fallen to 13·5 per cent., and that in 1891 the proportion had further declined to 10·9 per cent. It naturally follows that the proportion of the total insane within the official cognisance of the Lunacy Commissioners increased in the twenty years 1871–91 from 82·3 per cent. to 89·1 per cent. To this extent, at any rate, the increase in the figures dealt with by the Commissioners does not in any real sense indicate an actual increase of insanity. It is true that the census returns show an increase in the proportion of the insane to the population at the successive censuses in 1871, 1881, and 1891, but they also show that while the increase in the ratio of enumerated insanity to population was 7 per cent. between 1871 and 1881, it fell to 3 per cent. between 1881 and 1891. The fact, however, that the proportion of the insane to the population was larger in 1891 than it was in 1871 affords no conclusive proof of any increase in the occurring cases of insanity. The census report points out that, on the basis of the recovery and mortality statistics published in the reports of the Lunacy Commissioners, it may be calculated that while the annual number of new cases per million of the population required to account for the increase of the enumerated insane between 1871 and 1881 was 639, the increase in the enumerated insane between 1881 and 1891 only implied 661 new cases annually per million of population. It is thus shown that the annual proportion of new cases of insanity to population was actually lower in 1881–91 than it had been in 1871–81, from which it may safely be inferred that the increase in the enumerated cases of existing insanity during the last intercensal period was merely the result of what has been called the accumulation of cases, mainly due to the increased longevity of the insane, through the steady decline of their death-rate. That this is a trustworthy explanation of the increase in the number of cases of existing insanity at the successive censuses in 1871, 1881, and 1891, is strongly corroborated by the following facts, also shown in the census tables. The proportion of the insane to the population under the age of forty-five years was practically stationary during the twenty years; it was 2·24 per 1000 in 1871, 2·29 in 1881, and 2·26 in 1891. While, on the other hand, the ratio of insanity to population between the ages of forty-five and sixty-five years was 6·16 in 1871, 7·20 in 1881, and 7·83 in 1891; and above the age of sixty-five years the ratios in those years were successively 6·95, 8·0, and 8·61 per 1000 living at those ages. Thus the whole of the increase in the ratio of insanity since 1871 has occurred above the age of forty-five years, which fact cannot be with probability attributed to the occurrence of new cases of insanity in later life. These are some of the grounds on which it appears justifiable to base the satisfactory and reassuring conclusion that the rate of occurring insanity has actually declined in recent years, and that the continued increase of existing cases, although at a declining rate, is simply the result of the more humane and skilful treatment in asylums of the constantly increasing proportion of the total insane that are brought within the official cognisance of the Lunacy Commissioners.

CHOLERA.

THERE is not much to be chronicled this week regarding the progress of cholera, and everybody is to be congratulated on the fact, considering that the season is advancing. The weather for this time of year has, on the whole, been cool, and has apparently exercised so far a repressing effect on the spread and development of the disease.

We learn from the Hague that cholera continues to make its appearance at Maestricht. Altogether 47 cases and 20 deaths have already occurred there. At Heer (near Maestricht), Haarlem, and amid the shipping of its channel, at Halfweg and Bennebrock, a few cases—about half of which proved fatal—have likewise occurred, as well as a few fatal cases at Amsterdam.

In Galicia, according to the official reports from Vienna, the disease appears to be unduly prevalent. Sixteen of the seventy-four districts of that country are affected, 127 fresh cases, with 83 deaths, having been recently returned from those districts in the course of forty-eight hours. The Galician town of Laleszcyki is stated to have suffered from a severe outbreak of the disease.

There has not been any fresh intelligence from Berlin within the past few days regarding the progress of cholera. The Cholera Commission, which assembled at the Imperial Board of Health at the beginning of the present month, have submitted the results of their deliberations for the information of the various Federal Governments. The correspondent of the *Times* states that Dr. von Gossler, the President-in-Chief of the province of West Prussia, furnished the Emperor of Germany with a report as to the extent of the disease in and around that district, with a view to enable him to decide whether any military manœuvres should be held this year in Western Germany.

The official bulletin issued at St. Petersburg on the 7th inst. shows that between July 29th and Aug. 4th 313 cases of cholera and 240 deaths occurred in that city. From July 22nd to July 28th there had been 159 cases and 83 deaths in the city of Warsaw, and 394 cases and 212 deaths in the surrounding government district.

From Constantinople we learn that, in addition to the distress and alarm caused by the late earthquake, the officials are much exercised in regard to the late outbreak of cholera at Angora. Reuter's Agency states that the Sultan believes the occurrence of cholera in Adrianople was attributable to its importation from Hungary, while, on the other hand, it is alleged (and probably correctly so) that the disease was introduced into the city from Anatolia. It broke out in the barracks at a considerable distance from the town, but, as the sewage from the barracks is carried into the river Tundja, which flows through Adrianople, and is a source of the water-supply to the inhabitants, it is held that the disease was most probably communicated to the town through its agency. The Ottoman delegates of the International Sanitary Board at Constantinople at their last meeting did not reopen the question of the imposition of ten days' quarantine on arrivals from Europe.

There is no further intelligence concerning the alleged occurrence of cases of choleraic disease in Marseilles, the truth of which the local authorities of that town promptly denied, nor is there, indeed, any information as to the existence of any cholera in France.

As regards our own country, attention has been called to the arrival of the steamship *Balmore* at Gravesend on the 7th inst. from St. Petersburg, on board which vessel a fatal case of cholera is believed to have occurred. It appears that when that steamer left St. Petersburg the crew and all on board were perfectly healthy, but during the

voyage a seaman was attacked with symptoms supposed to be attributable to cholera, and the case proved fatal in a few hours. Some of the crew are stated to be suffering from diarrhœa and are under observation. The ship is in the hands of the sanitary authorities, by whom all necessary precautions have been taken. Experience has shown that the method adopted in this country is the best way of dealing with such occurrences and of removing any apprehensions to which they may give rise.

SOME REMINISCENCES OF THE LATE PROFESSOR HYRTL.

(FROM A CORRESPONDENT.)

THE famous anatomist who has just died at Vienna was always considered an eccentric man because his dress, his manners, and his mode of life differed in some respects from those of other people. It was particularly his time-worn garments that made him conspicuous, and he used in his walks the same soiled blouse which he wore while engaged in his laboratory or in gardening—his favourite hobby. Who would have thought this untidy person to be the world-renowned anatomist, and a rich man? This characteristic of Hyrtl gave frequent occasion to ludicrous incidents at which he himself used to laugh most. A few years back, when he was still in possession of his eyesight, he was accustomed to walk to Liesing, a charming Viennese suburb, where, in the beer-garden of the brewery, he refreshed himself with a glass of its well-known beverage. One afternoon he entered the garden and seated himself near a table at which a few merry Viennese burghers were engaged in diminishing the contents of a big dish of stewed fowl. These gentlemen had no idea of the identity of the newly arrived guest, and after eyeing his simple twill suit came to the conclusion that he must be an inmate of the Liesing asylum for the poor. A good portion of the dainty meal having been left uneaten, one of the guests called the waiter, saying, "Here, give this to that poor man; let him have a good feed for once," which humane proposal was loudly acclaimed by his fellow revellers. The waiter, who was a new hand at the brewery, obeyed the command, placing the dish of remnants before the famous *savant*, who, appreciating the joke, ate a few morsels and, after expressing his thanks, left the garden. A few moments later two waiters carried in a big bowl from which the gilded heads of champagne bottles were protruding. "We have ordered no champagne," cried the burghers, and their astonishment may easily be guessed on their being informed that "the inmate of the local asylum for the poor" had sent them the champagne as a mark of his gratitude for the stewed fowl, and that the donor was no less a personage than Professor Hyrtl. His sympathy with student life is well known, and many stories in this connexion are told of him. A Jewish medical student named Jerusalem was being examined, and in the hall there was waiting a small crowd of his co-religionists, when Hyrtl came out from the examination chamber. He was immediately surrounded by the crowd of young students, who asked him the fate of their comrade Jerusalem. Hyrtl, with a plaintive voice and sympathetically shaking his head, said, "Weep, O Israel; Jerusalem has fallen." Once a student was unable to reply to one single question at his examination. Hyrtl then asked him, "Perhaps you can tell me where you live?" The student named the street, of which Hyrtl professed his ignorance, and said, "You see how science is divided: you know nothing of anatomy and I do not know the locality where you live." An anecdote respecting his marriage is worth repeating. It was in the year 1866, when one day Hyrtl approached the porter of the Anatomical Institute, Andrew Swetlin by name. "Andrew, have you a prayer-book handy?" asked Professor Hyrtl. Andrew fetched the book, and Hyrtl went away. An hour later he returned and handed to the porter the prayer-book. The porter, unable to suppress his curiosity, asked, "You do not need it any more, Sir?" Whereupon Hyrtl replied, "No, thanks; I only needed it for a moment. I have just been at my own wedding."

STOCKPORT AND ITS WATER-SUPPLY.

AT the request of the Water Inquiry Committee of the town council of Stockport, Dr. Charles Porter, the medical officer of health, has recently drawn up a very exhaustive report upon the water-supply of the borough—a report which should be highly appreciated by the committee on account of its thoroughness, and which, in addition, raises important questions of more than local interest. The water-supply of Stockport is in the hands of a water company which derives its supply from three sources—i.e., an upland gathering ground, the Manchester Corporation Waterworks, and deep wells in the new red sandstone beneath the town. It is to the first of these sources that Dr. Porter devotes the greater portion of his valuable report, and he furnishes rough sketches of the means of excrement disposal &c. which obtain at the several dwellings located upon the catchment area. Without discussing these in detail, it may be stated that in many cases a condition of affairs was discovered which should be speedily put an end to, owing to the risks of specific pollution which their continuance entails, and it is satisfactory to note, by an addendum to the report, that some improvement has already been effected. The storage capacity of the existing reservoirs is, Dr. Porter thinks, insufficient and should be increased, and apparently during last year's drought an illustration of this insufficiency was furnished. In regard to the matter of filtration Dr. Porter points out that, so far as he was able to ascertain, no sufficient arrangement exists at Stockport for preventing the rate of filtration exceeding the limit compatible with safety. In the matter of water analysis, both chemical and bacteriological, the information which Dr. Porter was able to obtain does not seem to be as full as could have been wished, and past analyses appear to have been made of the combined effluent of the several filters and not of each separately—a precaution which is certainly desirable for ascertaining the action of the individual filter beds. In dealing with the question of sufficiency of supply Dr. Porter refers to the amount of loss from leaky mains, &c., and to the manner in which absorption of polluted matter may take place at the points of leakage. The by no means least important part of the report deals with the regulations of the water company in regard to the quantity of water allowed for flushing water-closets. The present allowance is one gallon and a half per flush—an amount which, as Dr. Porter points out, is certainly insufficient, and he advises that a minimum flush of three gallons should be procured. Lastly, the very important and far from exclusively local question of the right of entry and inspection of the waterworks by the officers of the sanitary authority is raised by Dr. Porter; and in dealing with this section of the report he quotes very aptly the recommendations of the Royal Commission on the Metropolitan Water-supply as to the desirability of the official water-examiner having legal right of entry to the waterworks, instead of, as at present, only being allowed to enter on sufferance. Certainly it is most essential, so long as one of the prime necessaries of life and health is in the hands of commercial undertakings, that the sources of water-supply and the methods of its purification should be under the supervision of an officer of the sanitary authority.

We have touched but lightly on Dr. Porter's report, but it will be obvious to all that the course he has taken opens up questions of no small magnitude in the matter of water-supply generally—amongst others the question as to how far filtration in waterworks other than those of Stockport is carried out according to the suggestions of Professor Koch. Into these questions we cannot enter now, but we believe that the general cholera survey, which the medical department of the Local Government Board are still carrying on, is revealing most divergent practices in regard to the storage, filtration, and analysis of water, and we shall be pleased to see that other medical officers of health have gone into the water-supply of their district with the thoroughness exhibited by Dr. Porter.

Naturally, a report such as the one referred to has not passed unchallenged by the water company; indeed, they have drawn up and circulated what they term "a few remarks" upon it. We have been carefully through this reply side by side with Dr. Porter's report, and, although the most is made of some unfortunate errors of detail which occurred in the latter, but which were apparently publicly

corrected prior to the water company's reply, we must say that, in so far as we have been able to judge, the water company have failed to traverse Dr. Porter's report. A prolonged debate has very recently taken place in the Stockport town council on the report in question, and attempts were made to disparage it. However, by an overwhelming majority, it was decided "that this council tenders its thanks to Dr. Porter for the very valuable report he has issued on the water-supply of the borough and ..... hereby assures him that they will at all times support him in any movement for the benefit of the health of the town."

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

OFFICIAL REPORT ON THE EPIDEMIC OF ENTERIC FEVER IN WORTHING DURING 1893.

[SECOND NOTICE.[1]]

WE referred incidentally, in our first notice of this outbreak, to the circumstances under which the Worthing wells may have become contaminated with the specific matter of enteric fever. With regard to the first stage of the outbreak there is much obscurity; the fact, however, remains that any infective excreta reaching a leaky main sewer to the west of the waterworks could easily have led to pollution of the soil and to the admission of such polluted matter into the adit where the large fissure was met with; and, as regards the second and greater outburst that took place in July, it is clear that much infective matter from antecedent cases must have been soaking from this leaky sewer and from a defective sewer in Park-road, and thus have given ample opportunity for the passage of specific matter into the Worthing water. This Park-road sewer carries the infirmary sewage, and there were during May and June 41 cases of enteric fever in that institution.

But long after the establishment of the epidemic in Worthing and in Broadwater there were prevalences of enteric fever in both West Worthing and West Tarring, neither of which are supplied with Worthing water. These prevalences are next considered by Dr. Theodore Thomson. In West Tarring (population 1070) there were six attacks in the fortnight ending July 7th, and the attacks did not cease until there had been 48 more, or 54 in all, up to the second week in October. In West Worthing, with a population of 2116, the disease began in the same fortnight ending July 7th; there were 54 attacks up to the middle of September, and after this a few isolated cases continued till towards the close of November. Both these occurrences were found to be divided into two attacks; the first had to do with cases few in number, and tending to affect one particular locality in each area, which took place antecedently to the middle of July; and the second with a considerable outburst in both places, which outburst was almost entirely localised in that section of each of the two areas in which the antecedent attacks had occurred. The first attacks were easily disposed of, the persons attacked up to the middle of July having been ascertained to be almost without exception individuals who had become infected in Worthing itself. This was, however, not the case as regards the subsequent outbursts; nor could these outbursts be shown to be due to milk-supplies, to sewerage and drainage, or to the general water-supply; but it was possible that a simultaneous pollution in limited areas of their common water-supply, apart from a pollution of the service as a whole, might account for the outbursts. The West Worthing water-service was common to West Worthing and West Tarring, and no suspicion attached at any time to its source in boreholes sunk in the chalk; indeed, if water pollution could account for the circumstances of the outbursts, there was the strongest presumption that this must have taken place after its withdrawal from the wells, possibly in a limited section of the company's mains. The West Worthing water-supply is, unfortunately, intermitted for a considerable interval of time between the afternoon of one day and the morning of the next, and, owing to the conformation of the ground, there are mains which rise to a ridge and then fall into lower areas. During the intermissions the higher portions of the mains tend to become emptied as the water flows down into the lower portions of the service. This is shown by means of a lithographic plate in the report. The mains are also provided with ball hydrants, which not only admit air into the mains as the water falls, but the water contained in the mains at these points is, to use Dr. Theodore Thomson's words, "especially liable to risk of pollution from matters cast on the roadways," and everyone can readily conceive what risk there would be from such things as "slops," for example, under the circumstances of an immediately antecedent prevalence of enteric fever. That the balls in the hydrants did drop was ascertained by Dr. Thomson near the summit of the ridge—that is specially in question as regards West Worthing—and it transpired that the results were such as might "have especially affected the two localities in which the disease was found chiefly to have prevailed." This was the more important because it so happened that the best streets in Worthing were watered with "Worthing" water, owing to the demand on the West Worthing water under the circumstances of the epidemic; although the use of Worthing water could not account for the earlier part of the outbreak. Then, again, there was heavy rainfall about twelve days before the commencement of the outbreak, and this heavy rain would naturally wash the surface of the streets and facilitate the entrance of any filth or specifically polluted water into the hydrants at points where the mains were temporarily empty. As a matter of fact, a small outbreak of enteric fever in West Worthing and in West Tarring, which took place in 1892, and which had much the same localisation, was attributed by Dr. Kelly, the medical officer of health, to infection of water in the mains through the ball hydrants. This point deserves the serious consideration of water engineers and of authorities purveying water to the public. It has again and again been shown that these ball hydrants may become a source of danger in the method indicated, and it is not long since Dr. Gresswell, the chief health officer to the Victorian Government, showed conclusively that in Melbourne a considerable portion of the population living in one special block of streets received a poisoned water through this means. Happily the channels and roadways in which our ball hydrants are commonly placed in this country cannot be compared, in point of filthiness and risk of infection, with those in the Victorian capital; but the circumstances involved are parallel, and both mother country and colony may learn a lesson from that which has been ascertained to exist on one and the other side of the globe.

Dr. Thomson concludes his report by giving an account of the various measures that were adopted at the time of the epidemic to prevent the further spread of the disease. Some of this action was necessarily of a temporary character, consisting as it did of attempts to close the new heading in the well, of measures to secure a fresh water service pending the construction of new works, and of measures of isolation and disinfection. Others, again, were permanent in their effect. Taken together, they were very costly, and the loans raised to meet them are very considerable. But Worthing has determined to rid itself of the stigma which so suddenly attached to its fair fame; new works of sewerage and of water-supply have been determined on, and much of the needed action has been taken. The old waterworks have been finally abandoned, and, although we have not noticed any actual statement to that effect, we may feel pretty certain that in West Worthing such action will be taken as to prevent any possible future contamination of water in the mains through the ball hydrants. Every assistance was evidently accorded to Dr. Thomson during the progress of the inquiry by Dr. Kelly and by all the officials and authorities concerned; and readers of the official report will agree that the information thus accorded and the results acquired by additional investigation were utilised with very considerable ability in unravelling the circumstances of an epidemic which is of the utmost importance from the etiological and public health points of view.

[1] The first notice appeared in THE LANCET of Aug. 4th.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6229 births and 3455 deaths were registered during the week ending Aug. 4th. The annual rate of mortality in these towns,

which had increased in the preceding three weeks from 15·9 to 17·0 per 1000, further rose last week to 17·2. In London the rate was 17·6 per 1000, while it averaged 17·0 in the thirty-two provincial towns. The lowest rates in these towns were 8·4 in Derby, 9·8 in Portsmouth, 10·4 in Swansea, and 12·3 in Brighton; the highest rates were 20·1 in Gateshead, 20·2 in Plymouth, 21·8 in Manchester, 27·8 in Liverpool, and 29·0 in Preston. The 3455 deaths included 639 which were referred to the principal zymotic diseases, against 591 and 622 in the preceding two weeks; of these, 328 resulted from diarrhœa, 99 from measles, 80 from diphtheria, 66 from whooping-cough, 35 from scarlet fever, 23 from "fever" (principally enteric), and 8 from small-pox. No fatal case of any of these diseases occurred last week in Derby; in the other towns they caused the lowest death-rates in Swansea, Hull, Cardiff, and Oldham, and the highest rates in Salford, Sheffield, Leicester, Liverpool, and Preston. The greatest mortality from measles occurred in Bristol, West Ham, Halifax, and Sunderland; from whooping-cough in Birkenhead and Halifax; from "fever" in Gateshead; and from diarrhœa in Brighton, Leicester, Nottingham, Preston, Liverpool, and Sheffield. The mortality from scarlet fever showed no marked excess in any of the large towns. The 80 deaths from diphtheria included 57 in London, 3 in Manchester, 3 in Leeds, and 2 each in West Ham, Salford, and Huddersfield. Five fatal cases of small-pox were registered in London, 2 in Birmingham, and 1 in Manchester, but not one in any other of the thirty-three large towns. There were 215 cases of small-pox under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 4th inst., against 97, 79, and 207 at the end of the preceding three weeks; 40 new cases were admitted during the week, against 17, 10, and 152 in the preceding three weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2221, against 2143, 2198, and 2197 on the preceding three Saturdays; 259 new cases were admitted during the week, against 264 and 241 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 124 and 160 in the preceding two weeks, declined to 144 last week, and were 45 below the corrected average. The causes of 63, or 1·6 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Cardiff, Oldham, Bradford, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Bristol, Blackburn, Preston, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 16·9 and 15·1 per 1000 in the preceding two weeks, rose again to 16·3 during the week ending Aug. 4th, but was 0·9 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 11·1 in Paisley and 14·8 in Edinburgh to 17·5 in Greenock and 17·6 in Glasgow. The 466 deaths in these towns included 20 which were referred to diarrhœa, 15 to whooping-cough, 12 to diphtheria, 9 to measles, 7 to "fever," 2 to scarlet fever, and not one to small-pox. In all, 65 deaths resulted from these principal zymotic diseases, against 49 and 48 in the preceding two weeks. These 65 deaths were equal to an annual rate of 2·3 per 1000, which was 0·9 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had been 19 and 24 in the preceding two weeks, declined again to 20 last week, of which 13 occurred in Glasgow and 3 in Dundee. The 15 deaths from whooping-cough considerably exceeded the number recorded in any recent week, and included 5 in Glasgow and 3 in Dundee. The fatal cases of measles, which had declined from 13 to 8 in the preceding three weeks, were 9 last week, of which 4 occurred in Dundee and 3 in Glasgow. The fatal cases of diphtheria, which had been 8 and 6 in the preceding two weeks, rose again to 12 last week, and included 5 in Glasgow, 2 in Edinburgh, and 2 in Leith. The 7 deaths referred to different forms of "fever" showed a further increase upon those recorded in recent weeks, and included 3 in Glasgow. The deaths from diseases of the respiratory organs in these towns, which had been 75 and 49 in the preceding two weeks, rose again to 54 last week, but were 26 below the number in the corresponding week of last year. The causes of 35, or nearly 8 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 17·4 and 22·2 per 1000 in the preceding two weeks, declined again to 20·0 during the week ending Aug. 4th. During the past five weeks of the current quarter the death-rate in the city has averaged 19·0 per 1000, against 16·7 in London and 14·7 in Edinburgh. The 134 deaths registered in Dublin during the week under notice showed a decline of 15 from the number in the previous week, and included 13 which were referred to the principal zymotic diseases, against 14 and 10 in the preceding two weeks; of these, 7 resulted from diarrhœa, 3 from "fever," 2 from scarlet fever, and one from small-pox, but not one from measles, diphtheria, or whooping-cough. These 13 deaths were equal to an annual rate of 1·9 per 1000, the zymotic death-rate during the same period being 3·5 in London and 1·2 in Edinburgh. The fatal cases of diarrhœa, which had been 6 and 3 in the preceding two weeks, rose again to 7 last week. The deaths referred to different forms of "fever," which had been 4 and 2 in the preceding two weeks, were 3 last week. The 2 fatal cases of scarlet fever corresponded with the number in the preceding week. The 134 deaths registered in Dublin last week included 21 of infants under one year of age, and 42 of persons aged upwards of sixty years; the deaths of infants showed a marked decline, while those of elderly persons showed a further increase upon those recorded in recent weeks. Five inquest cases and 4 deaths from violence were registered; and 44, or nearly a third, of the deaths occurred in public institutions. The causes of 5, or nearly 4 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING JULY, 1894.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality during July in each of the forty-three sanitary districts of London. With regard to the notified cases of infectious disease in the metropolis during last month, it appears that the number of persons reported to be suffering from one or other of the nine diseases in the accompanying table was equal to 9·4 per 1000 of the population, estimated at 4,349,166 persons in the middle of this year. In the preceding three months the rates had been 10·2, 9·6, and 9·1 per 1000. Among the various sanitary districts the rates were considerably below the average in Kensington, Westminster, Stoke Newington, St. Giles, St. Martin-in-the-Fields, Strand, and City of London; while they showed the largest excess in Marylebone, St. Pancras, St. George-in-the-East, Limehouse, St. Saviour Southwark, St. George Southwark, Bermondsey, and Plumstead. The prevalence of small-pox in London showed a marked increase during July, owing to the remarkable outbreak in Marylebone; 194 cases were notified during last month, including 117 in Marylebone, of which 112 were notified during the week ending July 28th. The Metropolitan Asylum Hospitals contained 187 small-pox patients at the end of July, against 129, 232, and 123 at the end of the preceding three months; the weekly admissions averaged 47, against 38, 60, and 28 in the preceding three months. The prevalence of scarlet fever in London showed a slight increase upon that recorded in the previous month; this disease was proportionally most prevalent in St. Pancras, St. George-in-the-East, Limehouse, St. Saviour Southwark, St. George Southwark, Bermondsey, Greenwich, Woolwich, and Plumstead sanitary areas. The Metropolitan Asylum Hospitals contained 2153 scarlet fever patients at the end of July, against 2182, 2216, and 2042 at the end of the preceding three months; the weekly admissions averaged 256, against 255, 273, and 235 in the preceding three months. The prevalence of diphtheria remained almost stationary during the month under notice; among the various sanitary districts this disease showed the highest proportional prevalence in Paddington, Bethnal Green, St. George-in-the-East, Poplar, St. Saviour Southwark, and Bermondsey. There were 435 cases of diphtheria under treatment in the Metropolitan Asylum Hospitals at the end of July, against 316, 330, and 351 at the end of the preceding three months; the weekly admissions

MONTHLY ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON—JULY, 1894.

(Specially compiled for THE LANCET.)

Sanitary areas.	Estimated population in the middle of 1894.	Notified Cases of Infectious Disease.										Deaths from Principal Infectious Diseases.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,349,166	194	1517	830	2	153	10	16	400	4	3126	9·4	5	255	86	174	134	2	20	—	390	1066	3·2	5390	16·2	172
West Districts.																										
Paddington	121,583	2	19	40	—	6	—	—	6	—	73	7·8	—	7	3	8	7	—	2	—	5	32	3·4	136	14·6	109
Kensington	167,350	—	30	25	—	3	—	—	4	—	62	4·8	—	10	—	3	3	—	2	—	15	33	2·6	183	14·3	193
Hammersmith	105,696	—	27	23	—	1	—	—	5	—	56	6·9	—	8	2	4	4	—	—	—	10	28	3·5	114	14·1	165
Fulham	110,993	—	37	18	—	1	—	1	11	—	68	8·0	—	3	1	5	5	—	—	—	8	22	2·6	126	14·7	138
Chelsea	99,052	2	32	18	—	6	—	1	13	—	72	9·5	—	6	4	2	9	—	1	—	11	33	4·3	140	18·4	173
St. George Hanover-square	75,033	2	15	11	—	2	—	—	2	—	32	5·6	—	3	3	1	4	—	—	—	1	12	2·1	73	12·7	92
Westminster	54,414	—	9	3	—	2	—	—	2	—	16	3·8	—	—	2	—	1	—	—	—	3	6	1·4	52	12·5	162
St. James Westminster	23,571	—	5	2	—	1	—	—	1	—	9	5·0	—	—	—	1	—	—	—	—	1	2	1·1	22	12·2	125
North Districts.																										
Marylebone	138,554	117	64	28	—	6	—	1	14	—	230	21·6	1	4	2	5	3	—	3	—	5	23	2·2	170	16·0	138
Hampstead	75,443	4	25	16	—	5	—	—	7	—	57	9·9	—	4	1	2	3	—	1	—	—	11	1·9	63	10·9	120
St. Pancras	233,739	17	112	44	—	12	—	1	37	1	224	12·5	1	13	4	10	8	—	—	—	24	60	3·3	307	17·1	189
Islington	331,900	4	115	75	—	12	—	1	26	—	233	9·2	—	11	5	14	17	—	1	—	40	88	3·5	395	15·5	190
Stoke Newington	34,172	1	6	2	—	1	—	—	3	—	13	5·0	—	—	—	—	—	—	—	—	—	—	—	15	5·7	56
Hackney	211,493	1	69	29	—	3	—	1	16	—	119	7·3	—	8	6	5	4	—	2	—	19	44	2·7	218	13·4	136
Central Districts.																										
St. Giles	38,144	1	7	3	—	—	—	—	3	—	14	4·8	—	—	—	1	2	—	—	—	2	5	1·7	57	19·5	191
St. Martin-in-the-Fields	13,783	—	2	—	—	—	—	—	1	—	3	2·8	—	—	—	—	—	—	—	—	—	—	—	18	17·0	429
Strand	23,179	—	3	—	—	—	—	—	1	—	4	2·3	—	1	—	—	1	—	—	—	—	2	1·2	28	15·8	77
Holborn	32,438	1	5	5	—	6	—	—	4	—	21	8·4	—	2	—	1	3	—	1	—	2	9	3·6	43	17·3	263
Clerkenwell	65,312	—	13	11	—	4	—	1	8	—	37	7·4	—	10	2	2	2	—	1	—	8	25	5·0	84	16·8	181
St. Luke	41,168	3	6	6	—	1	—	—	7	—	23	7·3	—	2	—	2	1	—	1	—	8	14	4·4	69	21·9	175
City of London	34,832	1	3	4	—	3	—	—	1	—	12	4·5	—	—	—	2	—	—	—	—	—	2	0·7	44	16·5	48
East Districts.																										
Shoreditch	123,186	6	48	21	—	3	1	1	13	—	93	9·8	1	7	2	4	4	1	—	—	24	43	4·6	179	18·9	289
Bethnal Green	129,840	15	32	43	—	10	1	—	13	—	114	11·4	1	15	1	12	—	—	1	—	10	40	4·0	199	20·0	208
Whitechapel	75,498	3	21	20	—	3	—	1	5	—	53	9·2	—	2	3	3	1	—	—	—	10	19	3·3	121	20·9	180
St. George-in-the-East	45,360	2	26	14	—	1	—	—	5	—	48	13·8	—	4	5	1	—	—	—	—	25	35	10·1	115	33·0	351
Limehouse	57,000	—	41	13	—	1	—	—	4	—	59	13·5	—	14	2	2	1	—	—	—	8	27	6·2	107	24·5	252
Mile End Old Town	108,242	—	44	15	—	3	—	—	8	—	70	8·4	—	13	3	5	2	—	—	—	14	37	4·5	174	21·0	202
Poplar	170,217	3	66	50	—	12	1	1	22	—	155	11·9	1	17	8	7	2	—	—	—	4	39	3·0	245	18·8	172
South Districts.																										
St. Saviour Southwark	26,712	—	13	15	—	—	—	—	3	—	31	15·1	—	—	1	2	—	—	—	—	1	4	2·0	32	15·6	157
St. George Southwark	60,060	—	33	17	—	1	1	—	8	—	60	13·0	—	4	—	5	—	—	—	—	15	24	5·2	94	20·4	278
Newington	118,512	—	39	21	—	4	—	—	12	—	76	8·4	—	6	—	6	1	—	—	—	19	32	3·5	166	18·3	156
St. Olave Southwark	12,984	—	4	3	—	—	—	—	2	—	9	9·0	—	1	—	1	—	—	—	—	1	3	3·0	21	21·1	143
Bermondsey	84,053	1	43	34	—	3	—	—	9	—	90	14·0	—	4	—	5	1	—	—	—	6	16	2·5	106	16·4	130
Rotherhithe	40,365	1	15	7	—	—	—	—	14	—	37	12·0	—	—	2	2	1	—	—	—	3	8	2·6	43	13·9	123
Lambeth	282,574	2	58	46	—	7	1	1	21	3	179	8·3	—	13	3	7	8	—	2	—	33	66	3·0	347	16·0	173
Battersea	161,558	—	60	21	—	8	—	—	20	—	109	8·8	—	12	—	9	8	—	—	—	16	45	3·6	176	14·2	144
Wandsworth	179,518	—	52	23	—	5	5	1	9	—	95	6·9	—	8	2	4	7	—	—	—	5	26	1·9	139	10·1	102
Camberwell	248,893	1	51	58	2	8	—	2	24	—	146	7·6	—	32	6	16	5	1	1	—	20	91	4·8	333	17·4	203
Greenwich	173,128	1	94	25	—	8	—	2	20	—	150	11·3	—	6	7	11	4	—	1	—	11	40	3·0	234	17·6	202
Lewisham (excluding Penge)	79,903	—	18	13	—	—	—	—	6	—	37	6·0	—	1	1	3	—	—	—	—	2	7	1·4	69	11·3	105
Woolwich	42,309	1	29	3	—	—	—	—	4	—	37	11·4	—	4	4	—	—	—	—	—	—	8	2·5	60	18·5	111
Lee	38,172	—	15	1	—	—	—	—	1	—	17	5·8	—	—	1	—	2	—	—	—	1	4	1·4	22	7·5	131
Plumstead	59,233	2	71	4	—	1	—	—	5	—	83	18·3	—	—	—	1	—	—	—	—	—	1	0·2	51	11·2	50
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 25 cases of membranous croup.

† Including deaths from membranous croup.

averaged 88, against 67 and 79 in the preceding two months. The prevalence of enteric fever showed a slight decline during last month; among the various sanitary districts this disease was proportionally most prevalent in Holborn, City of London, and Bethnal Green. Erysipelas showed the highest proportional prevalence in St. Pancras, St. Luke, Poplar, and Rotherhithe sanitary areas. Two cases of puerperal fever were notified in Camberwell, and 2 in Greenwich sanitary areas.

The mortality statistics in the accompanying table relate to the deaths of persons actually belonging to the various sanitary districts, the deaths occurring in the institutions of London having been distributed among the various sanitary districts in which the patients had previously resided. During the four weeks ending Saturday, July 28th, the deaths of 5390 persons belonging to London were registered, equal to an annual rate of 16·2 per 1000, against 18·4, 16·9, and 15·7 in the preceding three months. The lowest death-rates during July in the various sanitary districts were 5·7 in Stoke Newington, 7·5 in Lee, 10·1 in Wandsworth, 10·9 in Hampstead, 11·2 in Plumstead, and 11·3 in Lewisham (excluding Penge); the highest rates were 20·4 in St. George Southwark, 20·9 in Whitechapel, 21·0 in Mile End Old Town, 21·1 in St. Olave Southwark, 21·9 in St. Luke, 24·5 in Limehouse, and 33·0 in St. George-in-the-East. During the four weeks of July 1066 deaths were referred to the principal zymotic diseases in London; of these, 5 resulted from small-pox, 255 from measles, 86 from scarlet fever, 174 from diphtheria, 134 from whooping-cough, 20 from enteric fever, 2 from typhus, and 390 from diarrhœa. These 1066 deaths were equal to an annual rate of 3·2 per 1000, against 3·4, 3·6, and 2·8 in the preceding three months. No deaths from any of these diseases were recorded during last month in Stoke Newington or in St. Martin-in-the-Fields; in the other sanitary districts they caused the lowest death-rates in St. James Westminster, Strand, City of London, and Plumstead; and the highest rates in Clerkenwell, St. Luke, Shoreditch, St. George-in-the-East, Limehouse, Mile End Old Town, and St. George Southwark. Five fatal cases of small-pox were registered in London during the month under notice, the corrected average in the corresponding periods of the preceding ten years being 18; of these 5 deaths, 1 each belonged to Marylebone, St. Pancras, Shoreditch, Bethnal Green, and Poplar sanitary districts. The 255 deaths referred to measles exceeded by 28 the corrected average number; among the various sanitary districts this disease showed the highest proportional fatality in Clerkenwell, Bethnal Green, Limehouse, Mile End Old Town, and Camberwell. The 86 fatal cases of scarlet fever were 8 above the corrected average; this disease was proportionally most fatal in Chelsea, St. George Hanover-square, Poplar, Greenwich, and Woolwich sanitary districts. The 174 deaths referred to diphtheria exceeded the corrected average by 65; among the various sanitary districts this disease showed the highest proportional fatality in Paddington, Bethnal Green, St. George Southwark, Bermondsey, Battersea, Camberwell, and Greenwich. The 134 fatal cases of whooping-cough were 67 below the corrected average; this disease was proportionally most fatal in Chelsea, Holborn, and Camberwell sanitary districts. The 20 deaths referred to enteric fever were less than half the corrected average; there was no marked excess of mortality from this disease in any of the sanitary districts. The 390 fatal cases of diarrhœa were considerably less than half the corrected average, owing to the low temperature which prevailed during July. This disease showed the highest proportional fatality in St. Luke, Shoreditch, St. George-in-the-East, St. George Southwark, and Newington sanitary districts. In conclusion, it may be stated that the mortality in London during the month under notice from these principal zymotic diseases was no less than 34 per cent. below the average owing to the unusually slight prevalence of summer diarrhœa.

Infant mortality in London during July, measured by the proportion of deaths under one year of age to registered births, was equal to 172 per 1000, and was below the average; the lowest rates were recorded in St. George Hanover-square, Stoke Newington, Strand, City of London, Wandsworth, Lewisham, and Plumstead; and the highest rates in St. Martin-in-the-Fields, Holborn, Shoreditch, Bethnal Green, St. George-in-the-East, Limehouse, and St. George Southwark sanitary districts.

THE SERVICES.

MOVEMENTS OF THE ARMY MEDICAL STAFF.

SURGEON-MAJOR-GENERAL GIRAUD, has been transferred from Colchester to Netley, where he has assumed the duties of Principal Medical Officer. He has been succeeded at Colchester by Surgeon-Colonel Catherwood from Aldershot. Brigade-Surgeon-Lieutenant-Colonel Rooney has obtained leave from Gibraltar. Surgeon-Major Morris has embarked for Bermuda on return from leave. Surgeon-Captain M. Russell has been posted to Shoeburyness. Surgeon-Colonel Martin and Surgeon-Captain Peake have arrived from India on leave. Brigade-Surgeon-Lieutenant-Colonel Macartney has been granted leave from Malta. Brigade-Surgeon-Lieutenant-Colonel Harrison, retired pay, has been appointed to the Medical Charge at Kingston-on-Thames, in succession to Brigade-Surgeon Sly, who has resigned the appointment. Surgeon-Major Laffan, lately serving in the Sanitary Department of the Egyptian Army, has resumed duty in the British Medical Service and been posted to Ireland. Surgeon-Captain Braddell has been transferred from the North-Eastern District to Aldershot.

INDIA AND THE INDIAN MEDICAL SERVICES.

Brigade-Surgeon-Lieutenant-Colonel Wilson, A.M.S., whose appointment as Administrative Medical Officer, in anticipation of promotion, has been approved by his Royal Highness the Commander-in-Chief, has been transferred to the Madras Presidency. The services of Surgeon-Major C. B. Hunter, I.M.S. (Bengal), are placed temporarily at the disposal of the Chief Commissioner of the Central Provinces. The services of Surgeon-Captain H. E. Drake-Brockman, F.R.C.S. Eng., I.M.S. (Bengal), are permanently placed at the disposal of the Government of the North-West Provinces and Oudh. The services of Surgeon-Captain J. M. Cadell, M.B., I.M.S. (Bengal), are placed temporarily at the disposal of the same Government. Surgeon-Major G. H. D. Gimlette, M.D., I.M.S. (Bengal), Agency Surgeon in Baghelkhand and tutor to H. H. the Maharaja of Rewa, is granted privilege leave for three months. Surgeon-Major R. J. Baker, M.D., I.M.S. (Bombay), Residency Surgeon and *ex-officio* Assistant to the Political Resident in Turkish Arabia, is granted special leave for six months. Surgeon-Captain W. Henvey, I.M.S. (Bengal), is appointed to officiate as Residency Surgeon and *ex-officio* Assistant to the Political Resident in Turkish Arabia, during the absence on special leave of Major R. J. Baker, M.D. Surgeon-Lieutenant-Colonel W. A. Barren, I.M.S., M.O., Bombay Sappers and Miners, is allowed furlough to Europe for two years on private affairs.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major Henry G. Dyer, M.D., having resigned his Volunteer appointment, ceases to be an officer of the Army Medical Reserve of Officers.

VOLUNTEER CORPS.

Rifle: The Queen's Rifle Volunteer Brigade, the Royal Scots (Lothian Regiment): Surgeon-Captain C. W. MacGillivray, M.D., to be Surgeon-Major.—2nd Volunteer Battalion, the Queen's (Royal West Surrey Regiment): Surgeon-Lieutenant E. C. Drake resigns his commission.—4th Middlesex (West London), Surgeon-Lieutenant E. Lloyd-Williams to be Surgeon-Captain.

VOLUNTEER MEDICAL STAFF CORPS.

The London Companies: Surgeon-Lieutenant J. F. Butler-Hogan resigns his commission.

STONY STRATFORD AMBULANCE SCHOOL OF INSTRUCTION.

On Tuesday, July 31st, the prizes gained by the successful competitors at the Ambulance School, Stony Stratford, were distributed by Surgeon-Major Fraser Stokes, of the London Rifle Brigade, Senior Medical Officer Instructor to the London Volunteer Ambulance School of Instruction. Surgeon-Lieutenant-Colonel Baynes, of the 1st Middlesex, and Surgeon-Major Bull, 1st Bucks R.V.C., founder of the Stony Stratford School, and joint founder with Brigade-Surgeon Holland, of the 1st Bucks Bearer Company, a squad from which, under Surgeon-Major Bull's command, obtained second place in the recent competition for the Ambulance Challenge Shield, were also present. At the conclusion of the prize distribution Surgeon-Major Stokes expressed his pleasure at the results which could only be obtained, he said, by a great deal of work. Surgeon-Major Bull told them the results were due

entirely to the men, but he thought a great deal depended on the instructor. He also took this opportunity of pointing out that it was their duty to work under, and not in place of, medical men.

ALDERSHOT SEWAGE FARM.

Public attention has been frequently called to this subject. There can be no doubt that the sewage farm at Aldershot is not in a satisfactory state, and that considerable change in its working would be required to make it so. The fact is that the existing farm is not only unsatisfactory and inadequate but badly placed. From all we can learn, the smells from it are an occasional nuisance and source of complaint, although it may be difficult to prove that they are a cause of positive disease, and the present site of the farm prevents the utilisation of otherwise excellent ground for the erection of hospital or barrack buildings. Under such circumstances the obviously proper course is to provide another site in an unobjectionable position for the construction of a new sewage farm on the latest and most approved system, and the simplest plan of doing so would probably be to have one under Government control both for the troops in Aldershot and the civil population in the immediate vicinity of the camp. The Government should adopt some plan of this sort, for the work will, sooner or later, have to be carried out, and the sooner the better.

ARMY MEDICAL OFFICERS IN INDIA.

We notice that, in reply to a question from Mr. Hanbury in the House of Commons, Mr. H. Fowler is reported, in the *Times* of the 3rd inst., to have said that he was not aware of any understanding that a portion of the saving effected by the institution of the station hospital system in India and the abolition of the forage allowance was to be expended on medical officers in charge of such station hospitals. It may be that there is no official record of a favourable decision of the Secretary of State for India in this respect, but we have always heard and understood that it was recommended to the Indian Government by the then Principal Medical Officer of Her Majesty's troops at the time he put forward the scheme by which the large saving in question was effected. Considering all the circumstances and the increased duties and responsibilities imposed upon medical officers in charge of station hospitals, it seems to us to have been a very just and reasonable claim.

SIR JOSEPH FAYRER, K.C.S.I., F.R.S.

The approaching retirement from his post as Physician to the Indian Council of Sir Joseph Fayrer, who presented the prize in Pathology at the close of the Netley session, was referred to in a speech on that occasion by Surgeon-General Maclean. He spoke of the great interest Sir Joseph Fayrer had ever taken in the Army Medical School and in the officers of both services, and referred to the occasion as being the last on which Sir Joseph Fayrer attended the distribution of prizes as a member of the Senate of the school. On many occasions he had used his influence to uphold the integrity and prestige of the school, feeling convinced of the absolute necessity of its existence, and of the value derived from the teaching given.

ARMY MEDICAL STAFF.

The rumoured extension of the age retirement clause in the existing regulations, which we notice is alluded to and commented upon by some of our service contemporaries, if carried into effect, would probably give rise to a good deal of consideration and discussion in the medical service. It was stated to be the intention of the authorities—with a view, no doubt, to facilitate the working administration of the department—to extend the service age of Surgeon-Major-Generals to sixty-two. Promotion is already very slow in the medical service, and it seems to us that the effect of the measure would have been to retard it still more in the ranks below those named. We have ascertained, however, that there is no truth in the rumour.

Sierra Leone is keeping up its reputation, says the *Army and Navy Gazette*, as the white man's grave this year, as the following figures show. The average strength of European officers of the garrison has been twenty-three; number of deaths from March 1st to June 30th, five, all from climatic causes. Number of officers invalided in the above period, six.

Classes for instruction in the inspection of meat have recently been held in Edinburgh for medical officers only, and several certificates have been granted. These classes, which are being continued, will prove of great value in qualifying officers of the Medical Staff to judge the quality of the meat rations supplied to hospitals.

Surgeon-Colonel Mackey, C.B., of the Army Medical Staff, has been appointed Honorary Surgeon on the personal staff of His Excellency the Viceroy of India.

Correspondence.

"Audi alteram partem."

"SOME COMMON SOURCES OF ERROR IN TESTING FOR SUGAR IN URINE."

To the Editors of THE LANCET.

SIRS,—Dr. Pavy says that I have "carried the question regarding sugar in healthy urine into one of quantity." This is but partially correct, since I have expressed myself "doubtful" as to the existence of any sugar in normal urine, and now that I have read Dr. Pavy's interesting and instructive work on "The Physiology of the Carbohydrates" I am more doubtful than I was before. The author states that he obtains from normal urine a substance, believed to be sugar, in the proportion of 0·05 per cent. If sugar exists to the amount indicated it should not be difficult to obtain it in a crystalline form, as my son obtains kreatinine from its precipitated combination with mercury. It seems highly probable that the material which is obtained by the elaborate processes described on page 179 of Dr. Pavy's book is a *product* of the complicated operations, and not a genuine educt from uncharged urinary constituents.[1] The solution of the problem, with respect to which for many years conflicting statements have been made by chemists and physiologists of equal eminence, has been greatly simplified and facilitated by my son's interesting and fruitful discovery, made seven years ago,[2] that after the removal of the uric acid and kreatinine from normal urine no reducing agent is discoverable by the ammonio-cupric or the picric acid test, both of which are extremely delicate.

The success of the process depends upon the complete removal of the reducing kreatinine, since so sensitive is the reaction with picric acid that a distinct picramic reddening occurs in a grain to the ounce aqueous solution of kreatinine which has been diluted 400 times; and a specimen of normal urine which gives an amount of reduction equivalent to 0·8 gr. per ounce of glucose—equal to 0·96 gr. of kreatinine—gives exactly the same reduction colour as the aqueous solution of kreatinine containing one grain to the ounce, first when undiluted, and with decreasing colour, when the two liquids are gradually diluted from 50 to 400 times.

Hitherto attempts have been made, with very variable results, to separate sugar in minute quantity from the other constituents of the urine, but in future I anticipate that the easier and more trustworthy method of separating the non-saccharine reducing agents, while leaving in solution any sugar that may be present, will be generally adopted, and this will constitute what may be called "a new departure" in urine testing. My son has proved that any sugar that may be present in the urine is neither destroyed nor removed by his method for separating the normal reducing agents; since when a known quantity of glucose has been added to the urine it is found undiminished in the filtrate after the completion of the mercuric chloride process, by which the removal of uric acid and kreatinine is effected. I have repeatedly performed the following experiments. A portion of urine, presumed to be normal, having been deprived of its kreatinine &c. by the mercuric chloride process, the filtrate is found to be entirely free from any reducing agent. To another portion of the urine I have added glucose to the same amount as Dr. Pavy declares to be present in normal urine—namely, 0·05 per cent.; and again, after removing the kreatinine &c. by mercuric chloride, there is found in the filtrate an indication of the same amount of sugar as had been added to the urine. As there appears no possible source of error in the performance

[1] Dr. Pavy shows that carbohydrates may be liberated from all animal substances "by the cleaving agency of acids and alkalies." (Pp. 118–119.)

[2] Proceedings of the Royal Society, vol. xliii.; Med. Chir. Trans., vol. lxxvi.

of these simple experiments the inference is that sugar is absent from strictly normal urine.

There are doubtless cases in which a trace of sugar may, for a time, be found in the urine of apparently healthy persons, as a result of an excess of saccharine and farinaceous food, or a defective power of assimilation; so there are cases of temporary albuminuria consequent on prolonged cold bathing, over-fatigue, alcoholism, mental worry, or a fit of indigestion, but glycosuria and albuminuria are alike abnormal, and not physiological.

The rarity or the frequency of a trace of sugar in the urine of the apparently healthy will be the more easily ascertained now that we have a simple and certain method for its detection. I am, Sirs, yours faithfully,

Savile-row, July 31st, 1894. GEORGE JOHNSON.

"FAILURE OF A VESTRY PROSECUTION FOR NON-NOTIFICATION."

To the Editors of THE LANCET.

SIRS,—With reference to your annotation last week under the above title, the vestry failed in their prosecution because within an hour of my finding that three children were suffering from diphtheria I sent my notification direct to the medical officer of health, or, in his absence from the vestry, the sanitary inspector, I wrote the notification on one "form" and directed Sister Louisa the way to the vestry from my house. It so happened that she had to pass the Orphanage, and she went in. The Sister in charge had meantime resolved not to send the children to the hospital. The Sister's mission to the vestry was a double one: (1) to deliver my notification certificate, and (2) to ask the medical officer of health to order the removal of the children to the hospital. In the extreme agitation the Sisters confused my notification with an "order" to have the children removed to the hospital. I am, Sirs, yours truly,

WILLIAM FEARNLEY.

Elgin-avenue, Maida-vale, W., Aug. 4th, 1894.

THE REPORT ON THE HEALTH OF LIVERPOOL IN 1893: A PROTEST.

To the Editors of THE LANCET.

SIRS,—Permit me to call your attention to the treatment I have experienced from the Health Committee of this city and their newly-appointed medical officer. In accordance with the regulations of the Local Government Board, I presented to the Health Committee, on the 22nd of last March, my report on the health of Liverpool during the year 1893. The committee passed a resolution that it was to be printed, as on former occasions, and when I retired from my position as medical officer on April 3rd I left instructions for the proofs to be sent to me for revision. Dr. E. W. Hope was appointed medical officer on April 4th; and, instead of the proofs being sent to me as requested, he kept them in his own hands, and I now find, on perusing the published report, that my report has been altered, many portions having been left out and extraneous matter introduced, and Dr. Hope announces himself on the title-page as joint compiler, with me, of the report. Surely, Sirs, this is not in accordance with the regulations of the Local Government Board, or with the courtesy one expects from a successor. I have written to the chairman of the Health Committee on the subject without any satisfactory result, and I forward you by this post a copy of the *Courier* newspaper containing our correspondence. Kindly insert this in your valuable paper.—I am, Sirs, yours faithfully,

J. STOPFORD TAYLOR, M.D.,
late Medical Officer of Health.

Grove-park, Liverpool, Aug. 3rd, 1894.

*** The Local Government Board have always held that a medical officer of health, on resignation, ought to be himself responsible for the report on so much of the year's proceedings as were included within the period for which he held office; and on several occasions his successor has written a separate report on the remainder of the year. In this instance the report had apparently to do with a period during which Dr. Stopford Taylor alone held office, and clearly his report and his alone can be regarded as the official one. If the health committee desired modification of the report they should have conferred with Dr. Taylor as to this. Clearly, no one else had a right to modify it, whatever objection might be regarded as attaching to it. Dr. Taylor will be quite justified in officially disclaiming all responsibility for a document thus altered.—ED. L.

RARE CAUSE OF DEATH IN UTERINE FIBROID.

To the Editors of THE LANCET.

SIRS,—As it is generally stated in text-books, and is held as an opinion by many gynæcologists, that fibroid tumours of the womb are vary rarely the cause of death, it may prove interesting, especially to those who are in the habit of meeting with these cases, to briefly relate one in which a fatal event was attributable to the presence of a growth of this kind.

I was called to see a woman aged forty-two, unmarried, concerning whom I obtained the following history. Three days previously she had suffered from swelling of the left leg, rendering locomotion painful though not impossible. On the morning of the day I saw her she was seized with faintness on rising from bed and felt so ill that she was obliged to remain there. This, with a history of menorrhagia, was all that could be obtained. I found her lying in bed with half closed eyes, extreme pallor of skin, the hands and feet icy cold, the pulse barely perceptible, no cyanosis or sweats, and the respiration rapid, deep, occasionally sighing—in fact, a marked condition of "air-hunger," to use a Teutonic expression, the exhaled air being quite cold. Although she could only speak in a whisper, the mental faculties were perfect, and she complained of a sense of weight and oppression at the epigastrium and a feeling of great distress and faintness; there was also a little retching at times. On examination of the chest there were found no diagnostic signs in the lungs, the air entering fully everywhere; the heart sounds were almost inaudible. The left leg was œdematous; a group of hard and enlarged veins could be felt on the inner side of the knee. In the abdomen a large central hard tumour was found reaching two fingers' breadths above the umbilicus—it was freely movable, non-fluctuating, and dull on percussion; it gave no auscultatory signs and presented all the appearance of a uterine fibroid. There was no tenderness over the tumour; the mammæ were virgin. A small quantity of clear normal urine was drawn off by the catheter. Heat was applied to the extremities, with sinapisms to the precordium. Injections of one-fiftieth of a grain of strychnine and ether were given subcutaneously, and oxygen for inhalation, but these remedies unfortunately proved unavailing, and she died eighteen hours after the first symptom of acute illness. Such a termination of a case where uterine fibroid had caused little inconvenience and had not previously attracted the attention of her usual medical attendant is decidedly rare and deserves notice. The cause of death was evidently the clotting of blood in the heart itself or large bloodvessels, and this was brought about either by thrombosis in the femoral vein and subsequently in the auricle, caused by the anæmia, or, thrombosis of the femoral vein having occurred from pressure of or extension from the tumour, embolism had resulted in the pulmonary artery. I incline to the latter supposition because of the sudden onset which happened on the patient getting out of bed in the morning, a process calculated to detach a soft clot formed during sleep.—I am, Sirs, yours faithfully,

Sloane-street, July 31st, 1894. VINCENT DICKINSON.

"AN EPIDEMIC OF SUICIDE."

To the Editors of THE LANCET.

SIRS,—I have been much interested in the note of your Paris correspondent on the above subject,[1] because I believe that my researches enable me to explain many of the facts he mentions. In the *Practitioner* of November, 1888, I pointed out the relation of mental depression and suicide to seasonal variations in temperature, drawing special attention to the excess of suicides in France in July, and I have ever since been collecting facts and statistics bearing on the subject. What I suggested was that the relation of mental depression and suicide to temperature was simply its relation to the effects of temperature on urate excretion, for I have shown that excess of uric acid in the blood causes high arterial

[1] THE LANCET, July 28th, 1894.

tension, which affects to a very important extent the intracranial circulation.[2] And when my researches come to be published in full it will, I think, be evident that there is not only a diurnal fluctuation in the excretion of uric acid, with a maximum excretion in the alkaline tide of the morning and a minimum excretion in the acid tide of the evening and early night, but that there is also, for similar reasons, an annual fluctuation in excretion, with a maximum in the warm months (April to July), when the acidity of the urine is at its lowest and the alkalinity of the blood at its highest point, and a minimum in the cold months (November to March), when the urinary acidity is greatest and the alkalinity of the blood least. In the daily cycle the excessive excretion in the morning is, as I have shown,[3] largely dependent on the retention of the previous evening and night; so in the yearly cycle the excessive excretion in the warm months is largely dependent on the previous retention in the cold months. Your correspondent specially mentions the onset of hot weather, and this is very interesting, because it is just with the onset of the heat and the first great fall in the acidity of the urine that the great rush of stored uric acid into the blood will take place. Then, again, 6 A.M. to 12 noon—the most frequent time for the fatal act—is also just the time of the largest daily excretion of uric acid—i.e., the time when there is most of it passing through the blood—and the facts I have collected will, I think, fully bear out this observation. In contrast with mental depression and suicide, gout shows us the effects of the opposite, or retention, end of the excretion cycles, for as regards the day its temperature is highest and the pain greatest in the evening and night, and lowest, and the pain least, in the hours of the forenoon; and, as regards the year, Sydenham is very emphatic as to February (towards the end of the retention period) being the month for first or most severe attacks, while he is equally careful to point out that if attacks are absent, or if chronic gout ever relaxes its hold, it is in the warm summer months. As to "lunar development" I have nothing to say, unless the moon is one of the factors in the weather; but valleys are generally more relaxing (equal plus perspiration lowered, acidity of urine, and increased alkalinity of blood) than elevated regions, even if blood pressure does not rise and fall with atmospheric pressure; and Scotland, as I have elsewhere pointed out, is "the land o' cakes," but not of roast beef, so that diet may to some extent account for the racial differences your correspondent notices.

I am, Sirs, yours truly,

Aug. 7th, 1894. ALEXANDER HAIG.

THE NORTHERN WORKHOUSE NURSING ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—The revelations that have taken place in regard to the treatment of the poor in some of our workhouses must have convinced a great many people that poor Tom Hood's poem containing the line

"He's only a pauper whom nobody owns"

is too true, not only as regards the dead, but unfortunately still more so as regards the living. The public conscience appears to have been aroused, and there is a strong desire that something should be done to make our workhouse infirmaries worthy of being what they really are—the State hospitals of England. The object of the Northern Workhouse Nursing Association is to attain this devoutly to be wished for consummation, and for several years they have been doing their best to improve the nursing in workhouses by providing trained nurses thoroughly acquainted with the duties in a workhouse. It has been found by experience that nurses trained in first-class workhouse hospitals, like Birmingham, Chorlton, Manchester, Marylebone, and several other places, are better suited for the work than those obtained from general hospitals. Already the association has been able to provide twenty-three unions with nurses, and in only one union has there been any friction between the association and the guardians, and in that case we think the public will scarcely blame the association when they know the manner in which the nurses were treated. For instance, the stove upon which the nurses cooked their food was in their bedroom, the paupers' bath-room answered a double purpose, serving as it did as a pantry in which to keep the nurses food, such as it was. The cleanliness of the institution can be judged from the fact that one nurse was considered extravagant because she wanted the counterpanes in the lying-in ward to be washed at least once in three months on hygienic grounds. Draw sheets were washed in the patients' lavatories and dried at night in the patients' day-room. Hot water was only available for the bath-rooms once a week. Not long since a very experienced union clerk expressed the opinion that the greatest impediments to the employment of trained nurses in workhouses are the master and matron. In some of the large workhouses the persons occupying the positions named are ladies and gentlemen, but even then it is only in very rare cases that the matron understands anything about really scientific nursing, and unfortunately they are too often ignorant of their own ignorance, and do very much less than they might do to make the nurses comfortable. It is impossible to imagine a more short-sighted policy on the part of guardians than that of neglecting to make proper provision for the comfort of their officials. I remember Mr. Basil Caine once saying that "it pays the public to make their officials comfortable, because by so doing they attract the best class of officers, and therefore the work is better done." Now, if we are to make our workhouse nurses comfortable it will be necessary to place the government of the sick wards on a basis similar to that in force in Scotland, where the board of supervision require one trained nurse for every twenty cases, and if the number amounts to upwards of sixty a lady superintendent must be appointed in addition, and in these cases the matron has no authority of jurisdiction, and of course no responsibility. If the Local Government Board would issue a similar order the work of the Northern Workhouse Nursing Association would be made much easier in one direction, and it would also be made much easier in another direction if the public would assist us financially. The association is doing its best to assist alike the guardians, nurses, and the sick poor, but funds are needed to carry on the work, as the training of each nurse costs about £20. Knowing as we do the good work that has been accomplished we feel that we have a right to appeal to all sensible people to assist in doing our best to cause these horrible workhouse scandals to be only a sad memory of a melancholy past and not a dreadful reality of the present.

I am, Sirs, yours faithfully,

JOHN MILSON RHODES, M.D.,
Chairman of the Northern Workhouse Nursing Association.

Barton Arcade, Manchester, Aug. 6th, 1894.

"THE NEW MEDICAL DEFENCE ASSOCIATION, LIMITED."

To the Editors of THE LANCET.

SIRS,—In your last issue the secretary of a new medical defence association not only challenges the Medical Defence Union to publish its financial position, but also denies the truth of your just opinion that the floating of a new company to form a third society of the kind is quite unnecessary, since the present machinery is so very efficient and active. The Medical Defence Union has already in the journals and at the recent annual meeting of the British Medical Association widely published its present flourishing financial state, but the council is glad of the opportunity afforded by Mr. Chaldecott's letter to do so once again and as clearly and prominently as possible, the more especially as the facts entirely corroborate your views. We may observe that, as Mr. Chaldecott knows well the answer to his first question is contained in the balance-sheet and financial statement published some six months ago in the Council's Report for 1893. No further notice of this or of his second question, which contains two assertions directly contrary to the fact, is therefore called for. Mr. Chaldecott further is anxious that the world should be informed how much cash the Medical Defence Union has in hand to carry on the work of the remaining four or five months of this year. As he declared that his new company to his knowledge possesses more than double the property of the two previously existing societies taken together, he must be able himself to answer his own question. Since, however, your readers may desire to have some true idea of the position of the Union, we may state that the cash in hands amounts to some hundreds of pounds, a sum, in fact, greater than the Union has previously possessed at a corresponding period of the year. The following statement, which was extensively circulated at Bristol last week, and is being sent to every

[2] Brain, 1892 and 1893.
[3] Uric Acid, second edition, p. 14 et seq.

member of the Union, speaks for itself, and clearly shows that the Union is neither ruined nor defunct, as has been falsely reported by some who are opposed to it:—

"PROGRESS DURING 1894.

"Six hundred and eighty-three new members have already joined this year, an increase larger than has occurred in any whole year previously.

"Total membership is now 3607, the resignations having been less than 1 per cent.

"The guarantee fund now exceeds £5000, and forms a splendid reserve fund, *which remains untouched, no necessity having arisen to call upon it.*

"*Finance.*—All claims for working, legal and other expenses, have again been wholly defrayed out of the annual income. *The Union is therefore quite free from debt and has ample funds in hand.*

"*Business.*—Twenty-three Council, and numerous Committee Meetings have been held during the half-year, and nearly 400 applications for assistance have been successfully dealt with on behalf of members."

Apologising for thus trespassing upon your valuable space,

We are, Sirs, yours faithfully,

A. G. BATEMAN,
J. A. MASTERS,
Hon. Secs. Medical Defence Union.

Aug. 8th, 1894.

"A DANGER OF THE ELASTIC TOURNIQUET."

To the Editors of THE LANCET.

SIRS,—I read with interest the account given in this week's issue of THE LANCET, by your correspondent "Medical Officer," of the unfortunate sequel to the use of the elastic tourniquet which he has experienced. I have not met with a case like his, so far as the actual cause of the injury is concerned, but I have notes of a case which has so many points in common that I venture to relate it in the hope that your correspondent may derive benefit from the treatment that was adopted for its relief, and also encouragement from the ultimate satisfactory result. During the time that I was officiating as assistant electrician at St. Bartholomew's Hospital a case of ulnar paralysis came under my care which was brought about by the undue pressure of an internal angular splint upon the ulnar nerve just above the elbow-joint. The paralysis affected all the muscles of the forearm and hand that receive their enervation from the ulnar. There was great loss of power in the affected group of muscles and also well-marked wasting of the interossei, particularly noticeable in the first interosseus space. The ring and little fingers were partially flexed into the palm and could not be extended owing to the participation of the two inner lumbricales in the paresis. The muscles when tested with the "coil" current reacted well, though somewhat sluggishly. No muscle gave the reaction of degeneration. The case was treated with the faradaic bath, a daily immersion for about half an hour being ordered. The subsequent progress of the case was satisfactory, and when the treatment had extended over a period of six weeks the paralysed muscles had regained much of their natural power, and great improvement in the wasting had taken place. At the end of three months the wasting had entirely disappeared and the muscular power had returned to its natural state. This case, then, it will be seen, though differing from that of your correspondent in the actual exciting cause of the mischief and in the nerve implicated, has these points in common—that there were well-marked loss of power and wasting in the group of muscles affected and that there was no reaction of degeneration. The latter circumstance lends a hopeful aspect to your correspondent's case, and I have little doubt that were he to adopt a similar line of treatment the same happy result would follow.

I am, Sirs, yours faithfully,

Aug. 7th, 1894. F.R.C.S. ENG.

THE CHELSEA HOSPITAL APPOINTMENTS.

To the Editors of THE LANCET.

SIRS,—I am not one of those gynæcologists who would prevent the obstetric physician from operating, though I do not like to mix up obstetrics and abdominal surgery, but I strongly protest against him having the field all to himself. In the above appointments the qualifications required are just about as germane to the appointments as the D.Sc., the D.P.H., or the F.C.O. I fancy it would be better for surgery generally that a class of operations that are unexcelled for not merely the surgical difficulties and gravity of their nature, but which demand high surgical instinct and the "surgeon's conscience," if I may trespass on the cant phrase of the day in politics, should be usually performed by surgeons, and I consider it an outrage that they are excluded from an essentially surgical appointment. It is a different thing, allowing obstetric physicians to operate and shutting the surgeon out altogether from his legitimate domain. As to the Chelsea results, inquiry would probably show that they can be matched elsewhere; hospitals which are flooded with obstetric physicians and general practitioners who operate without undergoing special training in surgical work everywhere produce the same results. Abdominal surgery has lived on statistics, and she will probably end by being devoured by her own children. If I lose a patient after an operation for piles, nobody troubles about it; if I open the abdomen there are the inquiries of the moralist, the antiseptic cranks of all kinds, the sex imbeciles, and a thousand and one faddists of one kind and another. But one may very well suggest in these days of progress that a mortality, after abdominal section for all causes, that averages more than 10 per cent. calls for the notice of the hospital staff and its careful consideration; where the mortality exceeds 12 per cent. the hospital committee should inquire into it too.

I am, Sirs, yours truly,

July 30th, 1894. GYNÆCOLOGIST.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Coroners' Inquests and Post-mortem Examinations.

As mentioned in a previous letter, inquests were held during the year 1893 by the city coroner on 957 bodies—563 males and 394 females. For the first time the number of cases in which a post-mortem examination was ordered was 112. It must be borne in mind that the coroner made informal inquiries into 605 other deaths, making a total of 1562 inquired into by him. The proportion of necropsies to inquests was 11·7 per cent.; to the total number of inquiries 0·717. It would be interesting to know what are the proportions in other coroners' districts, and it would be very satisfactory if details of these 112 necropsies could be secured, since it is obvious that such would form valuable contributions to pathological anatomy. A certain proportion of these necropsies are held in the mortuary at the Prince's Dock, to which, during the last year, fifty-six bodies were removed from the city and twenty-eight from the river—in all eighty-four. Attached to the mortuary, but under a separate roof, is a post-mortem chamber, where every convenience for the proper performance of such examinations is provided.

Viewing the Body.

It will be obvious from the preceding statistics what a relief the adoption of the proposal to dispense with viewing the body would be to Liverpool coroners' juries. In the good old days when each juror received a shilling there used to be many more jurors than were required—quite a crowd of them waiting outside the old coroner's court. It is not so now. Though every consideration is shown for them, and they are conveyed in a private omnibus from the court to all the various hospitals, the workhouse, the mortuary, or the private dwellings where bodies are lying for view, the office of inquest juror is thoroughly unpopular, and viewing the body is a most repugnant duty. At the mortuary this is now often done through a glazed partition.

Murderous attack on a Medical Superintendent by a Lunatic.

The many friends of Dr. Joseph Wiglesworth, the able medical superintendent of the County Asylum at Rainhill, will be extremely sorry to learn that he has been the victim of a murderous attack by an insane patient, who had a large wall-hook concealed up his sleeve. With this he stabbed Dr. Wiglesworth in the throat, inflicting a serious wound. The assailant was promptly secured, and Dr. Wiglesworth was attended to by Mr. Damer Harrisson, of Liverpool. At an early hour this morning he was progressing favourably.

Aug. 8th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Lunacy in Cumberland.

THE annual report of the Commissioners in Lunacy has just been issued. At the beginning of this year there were in the country at large 92,067 lunatics, idiots, &c., which is in excess of the number at the beginning of last year. This is the largest increase the Commissioners have yet had to record. There are 3063 insane persons per million of the population—or, to put it in another form, one per 326 inhabitants. In Cumberland, at the beginning of this year, there were as pauper lunatics 212 males and 201 females in asylums, 63 males and 68 females in workhouses, 11 males and 25 females residing with relatives or others, whilst 16 males and 3 females were in asylums chargeable to county and borough rates, the total being 599, of whom 302 were males and 297 females. There were 10 more females and 2 fewer males, leaving a net increase of 8 upon last year. Ten years ago the total was 541. There has been a greater increase in males than in females. The increase in the former is 34, in the latter 24—the total increase being 58.

A Combatant Surgeon.

The unusual occurrence of a promotion from non-combatant to combatant rank in the volunteer service recently took place in the South Shields detachment of the 5th Volunteer Battalion Durham Light Infantry. Dr. R. Crosby of South Shields was gazetted surgeon-lieutenant in the detachment on June 12th 1890. On the 11th ult. the commander of the corps, Colonel J. A. Cowen, V.D., specially selected Dr. Crosby for promotion to a combatant commission; and the last-named gentleman, having resigned his commission as surgeon-lieutenant, was on Saturday week gazetted captain.

Notification of Diarrhœa.

In the city council, Newcastle, it was agreed that until October 31st diarrhœa, from which any person above the age of four years shall be suffering, shall be deemed an infectious disease, of which notice must be given to the corporation.

A Low Death-rate in Gateshead.

The mayor has intimated that the present death-rate for Gateshead (9·5 per 1000) is the lowest in the country.

Cremation of a Darlington Surgeon.

The remains of the late Frederic John Hare, M.B., C.M., B.Sc., of Darlington and the Southern Hospital, Liverpool, were cremated at Manchester last week. Mr. F. S. Hare of Darlington and Mr. A. W. Hare of Keyworth, near Nottingham, attended as witnesses of the rite.

Newcastle-on-Tyne, Aug. 8th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

New Eye Infirmary, Greenock.

THE new eye infirmary built at the expense of Mr. Anderson Rodger, shipbuilder, and intended for the use of Greenock and the lower reaches of the Clyde, was opened on Aug. 3rd amidst great public enthusiasm. The working men of the district showed their interest in the institution by organising an inaugural demonstration on the part of the various trades connected with the local trade unions; they, with the provost and council, the local fire-brigade, and others, made an imposing procession, and as the day was a public holiday the crowd was enormous. The infirmary accommodates twelve in-door patients, has ample provision for dispensary and out-door practice, and every requirement for carrying on efficiently each department of ophthalmic work. It is built in the cottage hospital style of patent terra-cotta glazed brick, with a red-tiled roof, and cost about £2000. It is under the care of Dr. Cluckie. The interest and support extended by workmen to such institutions in the west of Scotland are social indications of a very encouraging kind, though in this particular instance such feelings are probably stimulated by the fact that the prevailing industries of the district (engineering, ship-building, &c.) involve much risk of eye injury, a view borne out by the statement that in the past fourteen years Dr. Cluckie has had under treatment no no fewer than 35,000 cases of eye injury and disease.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

British Dental Association: Irish Branch.

THE inaugural session of the summer meeting of the Irish branch of this association was held in Dublin on the 27th ult. and the following day, presided over by Mr. R. Theodore Stack. Incidents of practice of great interest to the dental profession were exhibited by Messrs. John O'Duffy, J. Smithson Thomson, Robert H. Moore, W. B. Pearsall, A. W. Baker, R. P. Lennox (Cambridge), and R. T. Stack. Mr. Stack, in his presidential address, dwelt on the services to surgery conferred by dentistry in connexion with anæsthetics. He thought all would agree that the true credit of having nitrous oxide, applied to the relief of pain was due not to the man who suggested the possibility of such application (Sir Humphry Davy), but to the man who, as far as they knew, never heard of this prophecy and who actually did make application of nitrous oxide for this purpose. He did not think he would meet with contradiction when he said that to Horace Wells, a dentist, they as dentists or as surgeons were indebted in the year 1844 for the practical discovery of general anæsthesia. Two years later, by a dentist also, anæsthesia under ether was introduced. He concluded with some important observations on the necessity of care and methodical examination of the teeth of children.—A large number of the members assembled at the Royal College of Surgeons on Saturday, the 28 h ult., to hear the communication of Dr. Frederic Hewitt on the administration of nitrous oxide gas and oxygen. In the course of his address he said that if they could, by simply adding small quantities of oxygen to the nitrous oxide, permit the patient to breathe more freely they would have achieved a step in the right direction. By the use of oxygen with nitrous oxide they would be able to administer the gas without producing the symptoms of asphyxia which so often accompanied the administration of nitrous oxide, as usually given, seriously embarrassing the operator. In order to achieve these advantages a little more complication was necessary in the process of administration, and Dr. Hewitt explained his apparatus for administering this mixture.

Board of Superintendence of Dublin Hospitals: Annual Report.

The thirty-sixth annual report on the condition and management of the Dublin hospitals receiving Parliamentary grants for the year ended March 31st, 1894, has just been issued. The Board state that, as hygienic measures have assumed such great importance and so extensive a development, special inquiry was made in each hospital to determine if due care were bestowed on ventilation, drainage, cleanliness, and the proportion of inmates to space. They lay stress on the necessity of combating infectious diseases by isolation, segregation, disinfection, and the speedy removal of patients to hospital, and they have ascertained that these precautions have been carried out as far as possible. They regard also as important the necessity of every hospital receiving Parliamentary grants in Dublin having a fully qualified resident medical officer, as well as a trained lady superintendent, or matron fully trained as a hospital nurse. Although it does not come strictly within their province, they nevertheless think it right to draw attention to the importance of a project which has recently been set on foot by an influential committee, whose object is the establishment of a Central Pathological Institute in connexion with the Dublin hospitals. An enormous amount of valuable pathological material, which, from its disseminated occurrence, is at present only available for teaching purposes to a limited extent, could thus be fully utilised. It would consist of the post-mortem and operation theatre specimens from the various hospitals, and unclaimed bodies from the unions and the Richmond Asylum. These would form subjects for high-class pathological instruction, which would be largely made use of by students. Medico-legal necropsies should, in their opinion, be performed at the proposed institute, and the student would thus enjoy the advantage, which he does not at present possess, of seeing this important operation thoroughly and systematically carried out. A bacteriological laboratory would form an indispensable adjunct to the institute and would be devoted to the examination of morbid secretions and to the diagnosis by the most recent methods of doubtful zymotic diseases in men and animals, as well as

to the elucidation of local epidemics, cases of meat poisoning, &c., while examinations of water, milk, food stuffs, &c., by bacteriological methods could here be conducted by a skilful bacteriologist. The Board are of opinion that such an institution would serve to supplement the work of the Dublin hospitals in several important particulars and fulfil many functions that are at present discharged imperfectly or not at all. It would, they consider, constitute a most essential adjunct to the existing resources of medical education in Dublin. The number admitted to these hospitals during the year amounted to 10,335, making the whole number under treatment 11,108, of whom 9882 left the wards either cured or relieved, or were discharged for other causes, and 484 died. On the day when the Meath Hospital was inspected the Board were of opinion that the male accident ward was somewhat overcrowded, and the beds in too close proximity; the hospital authorities, however, hope to remedy this by erecting additional wards. At this hospital an entirely new system of sewerage has been carried out, at a cost of £295. The Board again refer to the close proximity of very objectionable dairy yards to the Richmond and Whitworth Hospitals. During the winter season 150 to 200 cows are housed in a very small space under the windows of the hospitals. It need not be pointed out that such mephitic centres spread abroad organic emanations which must be injurious to the patients, and few will deny that dairy yards in a city are at all times a serious danger to the public health. As regards the Rotunda Lying-in Hospital, the chief structural work at present in progress is the erection of a new auxiliary hospital to be provided with all modern improvements, well-ventilated wards, good sanitary accommodation, operating theatre, &c. This structure will be connected with the main building by a corridor on each landing, and the lift and sanitary block are so arranged that they will be equally of use to both houses. The mortality of the labour patients was 1·19 per cent., and that of the chronic class 3·5 per cent.

Health of Dublin: Quarterly Report.

In the Dublin registration district for the June quarter the births registered numbered 2559, and the deaths 2037, or 3·3 under the average for the June quarter of the past ten years. The deaths from zymotic diseases amounted to 230, or 152 under the number for the preceding quarter. During last quarter as well as the preceding quarter whooping-cough was the most fatal of the zymotic diseases, the deaths from it forming one-fourth of the total number in this class. Influenza caused 32 deaths, or a decrease of 55; measles, 12, or a decrease of 21; scarlet fever, 11; enteric fever, 35; and typhus fever 1 only. During the quarter 17 cases of small-pox were admitted to hospital, but no deaths were registered. Previously to the admission of the first of the 17 cases referred to, the only case of the disease received in any Dublin hospital since the last quarter of 1892 was one admitted and discharged in the first quarter of this year. The mortality from diseases of the respiratory system (excluding phthisis, which caused 314 deaths) was much below the average for the June quarter of the past ten years, the total number of deaths being 328, or 104 under the average; of these bronchitis caused 181, and pneumonia 96.

Aug. 6th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Trional.

M. VOGT has recently communicated the results of his experience of the above hypnotic to the Société de Thérapeutique. He concludes that the drug is superior to sulphonal in that it acts more rapidly and procures calm sleep and a normal waking. The dose he recommends is from fifteen to twenty-two grains dissolved in some hot vehicle. Its use should not be continued beyond five or six consecutive days, such a period sufficing in the majority of cases to overcome an insomnial habit. Toxic urinary symptoms are only manifested when the urine is strongly acid in reaction. The symptoms are oliguria and hæmatoporphyrinuria. It is therefore well to render the urine alkaline during the employment of trional, and the constipation sometimes induced by the drug must be combated by means of purgatives in order to reduce the risks of accumulation to a minimum.

A Sanitary Prize.

Inventors of methods for the sterilisation of river water destined for human consumption are invited to send particulars of the same, before Sept. 15th, to the Préfecture de la Seine, Paris. The choice of the systems to be tried will remain with a special Commission appointed by the Prefect of the Seine. Those methods only will be entertained which will allow of a large quantity of water, sufficing to supply a town or a populous establishment—such as a barrack, public school, &c.—being purified at a moderate cost. Six thousand francs will be distributed in prizes, varying from 3000 to 1000 francs, amongst the most successful competitors.

The Microbe of the Plague.

The serious epidemic of plague now raging at Hong-Kong has attracted the attention of bacteriologists, who have sought to discover the specific micro-organism of that formidable disease. A French colonial physician, Dr. Yersin, has been occupied in studying the disease on the spot, and he now communicates the result of his inquiry. The period of incubation is four or six days, and then the disease commences suddenly with loss of strength. From the first day the bubo appears. It is often single, and is situated in most cases in the groin. The fever is of the continued type, and is complicated with delirium. Constipation is more frequently met with than diarrhœa. Death occurs in twenty-four hours, or it may be delayed until the fourth or fifth day. When the patient survives beyond this latter period the bubo softens and the prognosis is improved. The first bacteriological researches were made on living subjects. Blood furnished by a pricked finger at different stages of the disease never yielded the characteristic microbe, and cultures remained barren; the buboes, on the contrary, contain an abundance of a bacillus which is very short and small, with rounded ends, and which is not colourable by Gram's method, but is dyed violet by gentian. In eight patients Dr. Yersin discovered the specific bacillus in the buboes, and it was found in two other cases post mortem. It is especially abundant in the buboes, less so in the other lymphatic glands, and very rare in the blood at the time of death. The liver and spleen are swollen, and contain the specific micro-organism. Mice inoculated with a minute quantity of bubo pulp die in twenty-four hours with bacilli in the glands, viscera, and blood, in which last medium they are longer and thinner. The mice die of regular septicæmia. Inoculated guinea-pigs die in from three to six days. They present at the point of inoculation œdema, with enlargement of neighbouring lymphatic glands and of the liver and spleen. The longer the survival the greater the enlargement of the lymphatic glands. Of five mice inoculated with a few drops of pestiferous blood, one only succumbed (on the fourth day); a guinea-pig similarly inoculated died in six days. A mouse that had eaten the spleen of another mouse that had succumbed to the plague contracted the disease, as did a rat that had consumed a fragment of a bubo. The microbe grows easily on gelatine, yielding a uniform whitish layer.

Ulnar Oligodactylia in Hysterical Subjects.

M. Féré[1] calls attention to this condition, peculiar to hysterical patients, where the ring and little fingers are relatively shortened. On measuring the fingers of a great number of such patients M. Féré has invariably found the shortening more marked in one hand than in the other, the fingers most affected being situated on the hemianæsthetic side of the body.

Aug. 7th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Alleged Ill-treatment of Lunatics in a Private Asylum.

THE papers and reports in connexion with the charges of alleged ill-treatment of a patient at a licensed house for the insane have been laid on the table of the Legislative Assembly. Professor Anderson Stuart, the medical adviser to the Government, reported that he had inspected the institution, that the room in which the patient was confined was insufficiently ventilated and contained only a straw mattress, with three pieces of canvas as bedclothing, and that the proprietor of the asylum practically admitted

[1] Société de Biologie, July 28th, 1894.

that the patient had been isolated in the room from 10 P.M. to 7 A.M. without special attendance. Dr. Cox, the official visitor, stated that the treatment adopted was absolutely necessary, and the presence of an attendant in the room would have been injurious; the patient had, as a matter of fact, greatly improved in health while in the asylum. Dr. Manning, the Inspector-General of Asylums, also considered that the patient had improved in general health and could not have been neglected, and that the room was satisfactorily ventilated and had been passed by a Government officer. In reply to questions in the House, the Premier, Sir George Dibbs, said that as soon as the contract time for which State patients were taken at the institution expired they would be removed, and in the meantime he would see that the patients in the asylum had more supervision than at present.

Action to recover Damages from a Medical Man.

A case of considerable interest to medical men was recently tried at the Sydney District Court. Mr. A. F. B. Hull sued Mr. H. L. Cummings for £200 for alleged negligence in the treatment of his wife in her accouchement. The facts of the case were that Mr. Cummings attended Mrs. Hull in her first confinement, which was prolonged and required forceps. On the fifth day her temperature rose and she developed septic symptoms, from which she died three weeks after the birth of the child. Mr. Chambers saw the case in consultation and approved of the treatment adopted. Mr. Hull contended that the patient ought not to have become septic if Mr. Cummings had used proper aseptic precautions. Several leading obstetricians and gynæcologists in Sydney gave evidence in Mr. Cummings' favour, and after a trial lasting over two days the jury found for the defendant.

Case of Alleged Arsenical Poisoning.

Dr. W. R. Boyd, of Richmond, Victoria, is to be congratulated on the acumen recently displayed by him in the investigation of a case of what looks like most determined poisoning. On being called in to attend a patient named Herman Juncken, living in the same house with a Mrs. Needle, Dr. Boyd concluded that the case was one of arsenical poisoning. He collected some of the contents of the stomach vomited by the patient and had them analysed, with the result that they were found to contain arsenic. He then communicated with the police and suggested that they should enter the house at lunch time and seize the food given to Juncken by Mrs. Needle. The police did so, and arsenic was found in a cup of tea she had just poured out, while her own cup was innocuous. She was then arrested. Further inquiry showed that a brother of Herman Juncken named Otto, who had also lodged with Mrs. Needle, had recently died, the medical man who attended him having given a certificate of death from gastritis and endocarditis. His body was exhumed; the stomach and intestines were somewhat inflamed, and there were no other pathological conditions to account for death. An analysis of the contents of the stomach and intestines and of the liver showed the presence of arsenic.

Action of Snake Venom on the Blood.

At the last meeting of the Medical Society of Victoria Dr. J. W. Barrett gave a practical demonstration of the effects of injecting snake venom into the blood of living rabbits. His experiments confirmed beyond doubt the results obtained by Mr. Martin of Sydney, and stated by him in the *Journal of Physiology* last year, showing that rapid intravascular injection of a sufficient dose (0·000432 gramme per kilo) causes intra-vascular coagulation of the blood. The respiration ceased at death, but the heart continued to beat for some minutes. When the poison is injected slowly into the tissues, instead of into the blood, in the same dose, the blood fails to clot in the body, and only very slowly, or not at all, when drawn. In these respects snake venom acts in exactly the same manner as nucleo-albumen, and it appears probable that the snake venom produces nucleo-albumen when injected, though from what source has yet to be determined. These results tend somewhat to confirm the original statement of Professor Halford that snake venom acts primarily as a blood poison.

Blindness in Horses produced by their eating the Native Tobacco Plant.

In certain districts of New South Wales a large percentage of horses became affected with blindness, and a series of interesting investigations into its nature and cause are being conducted at the Veterinary College, Melbourne. The various plants growing in the affected districts were carefully examined, and among them was the native tobacco (nicotia suavioleus). When this was given to horses toxic symptoms were produced, with, after a time, failure of sight. The results of clinical investigation and post-mortem examination point very strongly to the conclusion that the affection is a tobacco amblyopia or retro-bulbar neuritis, similar in all respects to the same affection in man produced by smoking to excess.

A New Food for Use in Typhoid and other Fevers.

At the last meeting of the Victorian branch of the British Medical Association Mr. J. W. Springthorpe read a paper with the above title, in which he pointed out certain disadvantages in the generally adopted milk diet, such as its deficiency in albumen and carbohydrates, its tendency to curdle and produce intestinal irritation and distension, and its being a suitable pabulum for the growth of the Eberth bacillus. He proposes to substitute for milk a sterilised hopped malt extract, which consists of soluble carbohydrates (maltose, dextrose, lævulose, and dextrin), peptones, para-peptones, amides, extract of hop, and an ash rich in phosphoric and lactic acids. The solid extract constitutes about 15 per cent., and three pints contain about eight grains of lupulin. He has used this malt extract as the sole food in forty cases of typhoid fever, and with good results. It is palatable, keeps well, and is easily administered. It causes no irritation; the patients had remarkably little distension and slept unusually well.

The Surgical Treatment of Hydatid Cysts.

What is known as Bond's operation for the treatment of hydatid cysts is being largely adopted in the colonies. Dr. John Thomson, surgeon to the Brisbane Hospital, has recently reported a successful case. The cyst was a very large one in the liver. The abdomen was freely opened, the cyst was incised, and the mother cyst and all the contents were evacuated; the sac irrigated with sublimate solution (1 in 4000), boric acid powder rubbed into its walls, the incision in the fibrous cyst stitched up with silk sutures and dropped back into the abdominal cavity, and the abdominal incision closed. The wound healed by first intention, and the patient recovered perfectly.

Obituary.

C. R. ALDER WRIGHT, D.Sc., F.R.S.

By the death of Dr. Alder Wright at a comparatively early age chemical science has been bereft of one of its most distinguished members. It would be impossible in a medical journal to enumerate his many distinguished researches extending over the last thirty years, but two of these stand out as being of great importance to medical science—viz., Morphine and its Derivatives, and the Aconite Alkaloids. The first of these investigations was undertaken in conjunction with Mathiessen and Mayer, but latterly he worked alone, and his scientific labours culminated in the discovery of apomorphine, $C_{17}H_{17}NO_{21}$. The use of this important substance as an emetic in certain cases cannot be over-estimated, 0·02 grain of the hydrochloride being sufficient to produce vomiting. His work on the aconite alkaloids in conjunction with Dr. Luff was perhaps of a fuller character, though fraught with results of somewhat slighter import to medical science. Amongst his other additions to chemistry a recent work on Soap, its Production and Use, will be best remembered. Dr. Wright was one of the earlier Doctors of Science of the University of London, and held the post of Lecturer of Chemistry at St. Mary's Hospital for nearly twenty-five years. Amongst the students he was extremely popular, which may be attributed to his good nature and to the trouble which he took to go out of his way to give a separate explanation of any difficult point in the lecture to those who asked him. His lectures on metals were a special feature of the course, owing to his large metallurgical experience. The news of his sudden death was received at St. Mary's Hospital with every token of regret, and his loss to science generally will be greatly felt.

DEATHS OF FOREIGN MEDICAL MEN.—The death of the following member of the medical profession is announced:—Dr. Ch. Moinet, Senator for La Charente Inférieure.

THE

BRITISH MEDICAL ASSOCIATION.

MEETING AT BRISTOL.

VERY notable features in connexion with the meeting at Bristol were the thoroughness and care with which all the arrangements for the convenience of members had been carried out. The reception room was a model of completeness and utility. The reception subcommittee, of which Mr. Taylor was the secretary, deserved great credit for the organisation. All its members worked well, and it is satisfactory to know that their efforts were much appreciated.

The excursion committee were most successful in their arrangements, and Mr. J. Wathen, to whose share as secretary the bulk of the organisation fell, added greatly to the delight of those who took part in the excursions by exactitude and punctuality.

The entertainments committee probably have to undertake the most important arrangements in connexion with conferences and congresses, and the Bristol meeting was conspicuous for the admirable list of entertainments which were arranged for visitors. Much of the success was due to the secretary, Dr. W. H. C. Newnham, whose work required much tact and considerable correspondence. Many of the Bristol works were thrown open to the members, and the labour of arranging suitable hours was of a most difficult character. The Clifton residents were most hospitable to the visitors.

The capacity of the various hotels in the immediate neighbourhood was strained to the uttermost. The President, Dr. Long Fox, gave three dinners at the Queen's Hotel. At this hotel, as well as at the Royal and the Cliftonville Hotels, every attention was paid to visitors.

The number and quality of the musical entertainments provided deserve recognition. The Orpheus Glee Society rendered in a most careful manner selections at Clifton College, which delighted all who heard them. The Madrigal Choir, at the invitation of the Mayor and Mayoress of Bristol, gave an excellent entertainment at Colston Hall. Later there was an organ recital for the ladies given in the same hall. These entertainments formed a distinct point in the Bristol meeting.

Mr. D'Arcy Power read an interesting note, in the Section of Diseases of Children, on the Value of Bursal Enlargements as Indications of Incipient Tuberculous Arthritis. He stated that several children had recently come under his care with enlargement of the bursa in the neighbourhood of the hip and other joints. There was nothing to indicate that the joints were in the slightest degree affected when he first saw them, and in every other respect the children appeared to be perfectly healthy. Experience had taught him that tuberculous trouble thus starting in the bursæ rapidly spread to the neighbouring joints unless care was taken to prevent it. The joint became affected in different ways: sometimes by the direct spread of inflammation from the bursa (this was especially liable to happen in the knee), and sometimes by a secondary infection, the bursa appearing to act as the source of infection. This occurred rather frequently in the hip after enlargement of the bursa over the great trochanter. He gave details of six cases which he had seen this year to illustrate his argument, and maintained that the passive enlargement of bursæ in children was of great importance both in diagnosis and in prognosis: in diagnosis because they were often tuberculous; in prognosis because, unless great care was taken, the worst results were to be apprehended. The enlargement is either passive, due to inflammation caused by the irritative action of the tubercle bacillus, or it is suppurative, and is then the result of a mixed infection. The treatment of such cases, according to Mr. D'Arcy Power, follows directly from a knowledge of their pathology. Aspiration is insufficient in the passive effusion, as well as in the suppurative form of enlargement. The bursa must be laid open and scraped thoroughly with a flushing scoop, and the incision must be then completely closed without the introduction of any drainage-tube. It is of the utmost importance that union should take place by first intention, for if it does the patient will in all probability escape scot-free, whilst if it does not he will as certainly suffer from tuberculous arthritis, and there is danger lest the slight increase of inflammation thus produced may hasten the tuberculous process, so that the operation will have done more harm than good.

In the Gynæcological Section the subject introduced by Dr. Smyly on the Treatment of Hæmorrhage during the last two Months of Pregnancy led to a discussion which wandered wide of the subject set down. Questions of terminology and nosology occupied much time, and many of the speakers migrated into such topics as bleeding during the whole of the puerperal period. Some of the speakers believed that in placenta prævia bipolar version followed by slow delivery gave the best results. Barnes's plan of separating the placenta was also alluded to as being useful. In the Rotunda Hospital, according to Dr. Smyly, the use of dilating apparatus has of late not been found necessary. One definite point was made. The great danger of rapid delivery in placenta prævia was emphasised. The risks were:—firstly, the cervix and lower part of the uterus are in such cases very vascular and apt to tear like blotting-paper; and, secondly, delivery in the absence of uterine contraction is one of the surest ways of causing post-partum hæmorrhage. It was stated that in the less severe cases of accidental hæmorrhage the best results would be obtained after rallying the patient with stimulants and injections of ether; if there were no pains, by washing out the vagina with a hot antiseptic douche, followed by an iodoform tamponnade.

In the Psychological Section an interesting discussion was raised by Dr. Lionel Weatherly (Bath), who read a paper on the Law in relation to the Criminal Responsibility of the Insane. He held that the existing law, which is based on the "knowledge of right and wrong" as the test of responsibility, was wanting in latitude, and that steps ought to be taken to have it reconsidered by the judges in the light of experience and of the advance of medical and skilled opinion during the half century that had elapsed since the judges answered the question set to them by the House of Lords. He maintained that if it were proved to the satisfaction of the jury that an accused person was certifiably insane, and, further, that the crime for which he stood charged was the outcome of his mental disease, he should be entitled to their verdict and at once be placed under care and treatment. He moved a resolution to the effect that in the opinion of the meeting the present law as laid down by the judges in 1843 was not in accord with modern science and should be reconsidered. A number of legal as well as medical authorities took part in the discussion. Mr. Pitt Lewis, Q.C., said that to a great extent he was in accord with Dr. Weatherly. In these days the judges, no doubt, interpreted the words "know right from wrong" in different ways. As to the question of a remedy, he was aware of the difficulty of passing an Act of Parliament. What could be done was to put as broad and generous an interpretation as they could upon the word "know."

It meant the power of discrimination of some sort. Both lawyers and medical men would do well in the future to get an authoritative declaration from the Court of Crown Cases Reserved. "Know" should be taken in a liberal and extended sense, and interpreted according to the science of knowledge now possessed as to mental disease. In the end the resolution was adopted, and a committee was appointed to confer with the Medico-Psychological Association as to the best mode of obtaining the earliest possible action in the House of Lords in the matter. The subject is one of vital public interest, and it is to be hoped that a conference between recognised legal and medical authorities may be the means of strengthening the existing condition of things and bringing it more into accord with medical experience, without sacrificing the dignity and prerogative of the law. The existing legal test of responsibility is, in our opinion, inadequate and faulty if closely acted upon; but we are very doubtful whether, in the present state of our knowledge, it will be possible to frame any test which is less inadequate and less faulty, and which will at the same time meet with general acceptance.

Much care and labour had evidently been expended in bringing together in the Pathological Museum an interesting and instructive collection of specimens. The outstanding feature of it certainly was the bacteriological display brought from the British Institute of Preventive Medicine. There were specimen cultures of a very large number of micro-organisms, both pathogenic and non-pathogenic. In addition microscopic specimens of some of the more important and interesting of these were exhibited. Cultures and microscopic sections of the fungus-foot disease of India were shown by Drs. Boyce and Surveyor, in illustration of the paper they communicated to the Pathological Section. Mr. Stoddart showed a series of important experiments on the influence of water in modifying the sterilising action of sunlight on the typhoid bacillus. Clear water had little influence but peaty or muddy water had a very marked effect in lessening or preventing sterilisation. In the section devoted to morbid anatomy there was a goodly number of bottles showing lesions of the nervous system; and Dr. Alfred W. Campbell showed sections illustrating his paper on Degenerations consequent on Destructive Lesions of the Human Cerebellum, while Dr. Michell Clarke showed specimens of degenerations of the spinal cord, most of which were prepared by Weigert's method. Most of the specimens were from the Museum of the Bristol General Hospital. Diseases of the heart and large vessels were fairly represented; two of the more interesting specimens being of congenital heart lesion: one in which there is no communication between the right auricle and ventricle, an imperfect ventricular septum, and no auricular septum; the other in which there is transposition of the aorta and pulmonary artery, with patent foramen ovale, deficient inter-ventricular septum, and patent ductus arteriosus. A number of aneurysms of different vessels were shown. There was nothing specially noteworthy amongst the specimens of diseases of the respiratory system. Diseases of the gastro-intestinal tract were well represented. Amongst the liver specimens there was one of disseminated tuberculous masses in the liver of an ostrich, and a human liver with actinomycosis. Cystic disease of the kidney was represented by several excellent specimens. Several dermoid cysts were shown, in one of which was hair twenty-eight inches long, as well as bone and teeth; it had been removed from a little girl. Diseases of bones and joints had some well-marked examples exhibited. Mr. Charles A. Morton showed sections of tumours and tubercle illustrating rare forms or unusual conditions. Diseases of the skin were illustrated by means of drawings and photographs. Mr. Cyril Walker had a number of specimens and drawings of diseases of the eye, Mr. Victor Horsley exhibited specimens illustrating modern cranial surgery, and Mr. J. Hutchinson, jun., specimens and drawings illustrating syphilitic diseases of lymphatic glands. Mr. Munro Smith showed some interesting slides illustrating comparative pathology. There was in addition a large collection of ancient human crania illustrative of the races of Great Britain and Ireland.

On Thursday afternoon Sir Greville and Lady Smyth gave a garden party at Ashton Court. The house is a plain building, in a very large and beautiful park, containing crowds of red and fallow deer. Refreshments were provided on the lawn, and the band of the Royal Marines was present from Plymouth. The afternoon, unfortunately, became wet soon after the guests had gathered, and in a short time the rain descended in torrents. Sir Greville and Lady Smyth had hospitably thrown open their public rooms, and they were filled by an appreciative crowd. The most interesting room was a large museum with a polished oak floor, relieved by lion and tiger skins, relics, it was said, of Sir Greville Smyth's exploits as a hunter. The birds and animals which filled the cases were beautifully stuffed and arranged, but the object which attracted most general attention was a huge egg of an extinct Madagascar bird. Sir Greville Smyth is also the possessor of one of the few eggs still in existence of the great auk.

Clifton is situated in the centre of lovely scenery. In bygone times the locality was celebrated throughout Europe for possessing one of the then best-known waters in the world. Their virtues were extolled at least 2000 years ago, and yet until recently the present generation has been in ignorance of them. This should no longer be the case. Mr. Newnes has provided the means by which we can avail ourselves of their properties. On Wednesday, Aug. 1st, a distinguished company, including the President of the British Medical Association and the Mayor of Bristol, met together to take part in opening the new Spa.

The bathing appliances provided are of the newest types and of comprehensive variety. A Russian steam-bath has even been fitted up. From the lower grounds a passenger-lift has been provided. The Turkish baths are beautifully arranged, containing special douche, spray, and rain baths, with convenient dressing- and drying-rooms. There will be an extensive cooling-room, and the whole will be laid with mosaic marble flooring of elaborate design; as also will be the plunge bath. The new Spa will afford a valuable addition to the watering-places of Great Britain, and it is to be hoped that it may serve in some way in preventing Englishmen, as Dr. Long Fox put it, from thinking that every spring with a foreign name is more important than those at home. It is beyond doubt that the inhabitants of Bristol and Clifton owe a very large debt of gratitude to Mr. Newnes.

A number of members witnessed the demonstration of the Ling, or Swedish, system of physical training at Clifton Park on Tuesday, July 31st. The chair was taken by Mr. W. H. Harsant, F.R.C.S., and a demonstration of the various movements was given by Miss Theodora Johnson.

The annual banquet was held at the Victoria Rooms, Clifton, a large hall handsomely decorated with choice plants, on the evening of Thursday, the 2nd inst. A large number of visitors attended, and speeches were made by Dr. Long Fox (the President), Sir Thomas Grainger Stewart, Canon Ainger, Dr. Frederick Roberts, Sir Edward Hill, M.P., the Mayor of Bristol, Sir Charles Cameron, Sir Wm. Stokes, Prof. Voight, Dr. Osler, Dr. Gould, and others.

Dr. Osler of Baltimore, U.S.A., in speaking on behalf of the visitors, made a novel suggestion. He hoped that consideration would be given to the idea of holding a meeting of the Association at Montreal in the course of a year or two. They would, he assured them, receive in his native town as warm a welcome as had been accorded to the members of the British Association for the Advancement of Science.

The high estimation in which the President is held may be gathered from the remarks which fell from Sir Charles Cameron in proposing his health. He observed that, in addition to the highest culture, Dr. Long Fox possessed an irresistible charm of manner and a kindliness of disposition, in which were to be found the simple explanation of his popularity amongst all classes of the citizens of Bristol, and of the esteem in which he was held by his professional brethren. It was only, said Sir Charles Cameron, in a man's profession that a just estimate was formed of his character and his ability, and in placing Dr. Fox *primus inter pares* his own profession had paid him the highest compliment it could do, and they joined in wishing him long life and happiness. The British Medical Association's meeting in Bristol had been successful owing to his personal exertion. The President, in acknowledging the compliment, said he hoped they would all believe that he loved and honoured his profession and his professional brethren.

The Association was presented with a large quantity of wine, grown in the Big Tree district of California by Messrs. Grierson, Oldham, and Co., for use at the banquets, conversaziones, and other entertainments which were given in connexion with the Association.

The various excursions all took place on Saturday, Aug. 4th. A trip to Lynmouth and Ilfracombe was well patronised. The visitors were met at Weston by a deputation of medical men, and at Lynmouth an excellent lunch was served to them on board the *Ravenswood*, where Mr. Frederick Wade's military band played a fine selection of music. Lord Fitzhardinge threw open Berkeley Castle to the party, and the visitors were shown the shed where Jenner kept the cows on which he made his famous experiments. The excursion to Cheddar and Weston-super-Mare was of a most enjoyable kind, and the run down the Bristol Channel was pleasantly accomplished. Many members visited Wells and Glastonbury by a special train. Mr. J. Hancocke Wathen conducted a large number of visitors to Chepstow Castle, Tintern Abbey, and the renowned scenery of the Wye valley, and Dr. Yates, who met the party at Chepstow, expounded the historical and archæological associations of the various localities.

THE GENERAL MEETINGS.

THE THIRD GENERAL MEETING.

The third general meeting of the Association was held in the Victoria Rooms, Clifton, on Friday, Aug. 3rd. The Address in Preventive Medicine was read by Sir Charles Cameron of Dublin, and we publish the first instalment of it in our present issue.

Upon its conclusion a vote of thanks to Sir Charles Cameron was moved by Dr. W. H. Corfield, medical officer of health of St. George's, Hanover-square, and seconded by Dr. D. S. Davies, medical officer of health for the borough and port of Bristol.

On the motion of Mr. T. Garrett Horder, seconded by Dr. Ward Cousins, President of the Council, the meeting recommended the Council to form an ethical section at the next meeting.

Dr. Ward Cousins intimated that an influential deputation from London, headed by Dr. Russell Reynolds, had been received by the Council. The object of the deputation was to invite the Association to hold its next meeting in London This had been approved by the Council and was accordingly recommended to the meeting. The proposal was seconded by Dr. Long Fox, and unanimously adopted.

Dr. Russell Reynolds was appointed President-elect of the Association for 1894.

The customary votes of thanks were then awarded to the President of the Association, the Hon. Local Secretary, and to all who had contributed to the success of the meeting.

This concluded the general business of the Association.

THE SECTIONS.

MEDICINE.

THURSDAY, AUG. 2ND.

Dr. FREDERICK ROBERTS took the chair at 10 A.M. and called upon Dr. W. Hale White to open the discussion upon :—

Pyrexia and its Treatment.

The following is an abstract of Dr. Hale White's remarks:—An individual may be said to be suffering from pyrexia when the temperature is above that point at which it stands in health. In cold-blooded animals the apyrexial range is therefore very wide, but as warm-blooded animals all primarily terrestrial became evolved from cold-blooded animals all primarily aquatic the apyrexia range became less and less; in sparrows it is between 105 and 111, in dogs between 100 and 104, and in man between 98 and 99. The hypothesis is put forward that the evolution of warm-blooded from cold-blooded animals is due to the fact that it is a great economy for a terrestrial animal to be warm-blooded, but, owing to the comparative constancy of the temperature of sea and river water, it is not an advantage for aquatic animals to be warm-blooded. The mechanism by which the temperature of the body is maintained is as follows :—1. *Seat of production of heat.*—It is shown that this takes place chiefly in the muscles, where an enormous quantity must be produced. 2. *Control of production.*—Many experiments were described, all of which rendered it highly probable that the corpora striata controlled the production of heat, and other experiments showed that impulses were constantly passing down by the crux, pons, and spinal cord from the corpora striata to the muscles. This neuro-muscular apparatus can be influenced by the quality of the blood circulating in it and reflexly by peripheral impressions. 3. *Seat of the loss of heat.*—Most of the heat is lost from the skin. 4. *Control of the loss of heat.*—The loss of heat is controlled by the vaso-motor and sweat centres of the central nervous system. This thermolytic apparatus can also be influenced by the quality of the blood, and reflexly. 5. *Regulating mechanism.*—Experiments on living animals and dead tissues all show that the specific heat of animals is very high. This is of great importance for maintaining an even temperature. Experimental damage to the cerebral cortex often causes pyrexia. Some regard this as due to injury of the supposed thermotaxic centres there, but whether it is necessary to imagine the presence of such centres is doubtful. All pyrexia must be due to increased production or diminished loss of heat. Perhaps the cortical centres are thermogenetic. The perfect delicacy of regulation between production and loss in man has only been recently evolved, hence it is easily upset in children, and after a long illness, such as typhoid fever. To understand pyrexia, calorimetry is necessary. It has been shown experimentally that damage to the cortex, corpora striata, crura, pons, and cord will cause pyrexia. The same is true clinically. (*a*) Cortex. Upwards of fifty cases are given in which damage to the cortex produced severe pyrexia, no other cause for which could be found. The temperature sometimes reached 109° F. If the lesion is unilateral the temperature is highest in the axilla opposite to the lesion. Cases of meningitis in which the exceptionally high temperature suggests irritation of the cortex are quoted. As examples of pyrexia in functional disturbance of the cortex cases of pyrexia with epileptic fits, with delirium tremens, and with chorea are given. Hysterical, and the so-called "inexplicable pyrexia," are discussed; the leading features of each of these varieties are described, and it is pointed out that when they really exist—which is rarely—they are probably due to functional perversion of the cortex. (*b*) Corpus striatum. Many clinical cases of damage to this are given, and it is shown to cause considerable pyrexia. The temperature is in the unilateral lesions always highest in the axilla opposite to the lesion. The characteristics of the pyrexia due to cerebral hæmorrhage are given in detail. Cases of pyrexia due to lesions of the crura, pons, and cord

are cited, and thus it is proved that clinical medicine supports the experimental evidence of pyrexia due to damage of the central nervous system. The importance of this is not usually sufficiently recognised, 21 per cent. of all cases of hyperpyrexia being due to lesions of the central nervous system.

To show that the strong peripheral stimulation can cause pyrexia the following cases are quoted. About 80 per cent. of all cases of simple fracture have slight pyrexia; biliary and renal colic are associated with pyrexia. Six cases of burn with hyperpyrexia are mentioned; in none was there any sign of septic absorption, so probably the pyrexia was reflex from the peripheral stimulation of the burn. Other instances of reflex pyrexia are given.

Many substances circulating in the blood cause pyrexia—e.g., atropine, strychnine, cocaine, caffeine, pepsin, albumose, &c.; also the products of decomposing food, as ham, mussels, cheese, pork, &c. But the importance of the pyrexia produced by the circulation in the blood of the toxines produced by the micro-organisms of the specific fevers overshadows that of all others. The pyrogenous toxines of anthrax and diphtheria have been isolated and separated from the toxines which produce the other symptoms, and pyrogenous substances have been separated from cultures of many bacilli. What part of the neuro-muscular thermic apparatus these substances act upon is not known.

The treatment of hyperpyrexia must be very prompt and energetic; 84 per cent. of all cases are fatal. Comparison of methods of treatment in rheumatic hyperpyrexia shows that antipyretic drugs are useless, that cases must be treated at once by the cold bath, and this is probably true of all varieties of hyperpyrexia.

In the treatment of pyrexia it has to be remembered that a moderate degree of it has never been shown to be harmful; that we are only treating a symptom; that in any case we are much in the dark as to whether the production of heat is increased or the loss diminished; that we are similarly in the dark as to how the antipyretic acts; that a moderate degree of pyrexia may be actually beneficial to the patient—that, indeed, some regard it as really one of the defensive mechanisms of the body; that the lowering of the temperature may impair immunity from future attacks; that the treatment of a single symptom gives a false sense of security, for, although the temperature falls, the other dangerous effects of the toxine may progress in some diseases, as anthrax and diphtheria, in which the pyrogenous toxine is distinct from the other—this is very likely; that we are abolishing a valuable means of diagnosis; and, lastly, that the remedy may be worse than the disease. For all these reasons the treatment of pyrexia as such is unsound. Let, therefore, the fevers be examined in which the treatment of it appears to do good. (*a*) Ague. Here quinine acts as a direct poison to the plasmodium. (*b*) Typhoid fever. In this disease there is no doubt that cold water treatment is often beneficial; but it is equally certain that mild cases do not require it. The various modes of the application of cold are described, and then it is pointed out that it is not proved that cold does good because it is an antipyretic. In the first place, it is much more, for it diminishes the delirium and other symptoms and the liability to complications, and there is no evidence that they are due to the pyrexia—in fact, the evidence is the other way; and, further, it has been shown that cold baths greatly aid the excretion of toxines in typhoid fever, and therefore their effect is in a sense specific, like that of quinine in ague. It has also been shown that antipyretic drugs have not this effect. (*c*) Rheumatic fever. Here there is little doubt that the salicylates act as direct specifics, and that the temperature falls in consequence. (*d*) Pneumonia. Opinion is still divided as to whether this should be treated by cold, but, even if it should, it is not proved that it does good as an antipyretic. Perhaps it acts like cold in typhoid fever.

In conclusion, hyperpyrexia requires prompt treatment by cold baths. The treatment of pyrexia as such is on all grounds unsound. In ague and rheumatic fever we have specific remedies which as such improve all the symptoms, and consequently the temperature falls. In some cases of typhoid fever, and perhaps pneumonia, cold externally does good, not as an antipyretic, but probably by aiding the elimination of toxines. The use of ordinary antipyretic drugs is never called for in pyrexia or hyperpyrexia.

Dr. J. A. LINDSAY (Belfast) in opening the discussion upon Dr. Hale White's paper, expressed his sense of its great ability. He found himself in complete accord with the main positions of the writer, and he trusted the effect of the paper and the discussion would be to moderate the ardour with which antipyresis was at present often pursued. He had seen several of those cases of hyperpyrexia in nervous diseases to which Dr. Hale White had referred. In one case of moderately severe chorea the temperature suddenly shot up to 107°, and the patient died. There was nothing to show that the hyperpyrexia was of rheumatic origin. This case was interesting as bearing upon Dr. Hale White's view that the corpora striata controlled the production of heat. In another case—paraplegia from transverse myelitis—the temperature suddenly rose to 106°, and death ensued. He would direct his remarks chiefly to the antipyretic treatment of typhoid fever and phthisis. His experience of the new antipyretics—antipyrin, antifebrin, and phenacetin—was unfavourable. We could reduce the temperature almost at will, but there was rarely any satisfactory evidence of benefit to the patient. All these drugs were depressing, and in a disease like typhoid fever, where a long battle had to be waged, depressing remedies were peculiarly inadvisable. His chief reliance in the pyrexia of typhoid fever was on cold sponging, the cold bath, and full doses of quinine. In cases of moderate severity he thought great benefit accrued from the persevering use of cold or tepid sponging. In severer cases the cold bath was indicated, and he thought the profession should endeavour to combat the prejudice which existed in this country against this remedy. Quinine was an uncertain remedy, but often the benefit from its use was striking. It should be given in full doses of at least twenty grains seven or eight hours before the period of maximum rise. In the pyrexia of phthisis the new antipyretics seemed to him to be of little avail. The milder degrees of pyrexia might be successfully combated by diet, fresh air, and change of climate. The severer degrees of pyrexia in phthisis were too often uncontrollable. The benefit apparently following large doses of antipyrin or phenacetin was usually quite illusory. He would urge the general acceptance of Dr. Hale White's contention that, while hyperpyrexia called for the most prompt and vigorous treatment by the cold bath, pyrexia was not *per se* in ordinary cases a proper object of direct treatment.

Dr. OSLER (Baltimore, U.S.A.) had been greatly interested in Dr. Hale White's paper. He had seen cases of hyperpyrexia in chorea, and was disposed to think that the temperature rose in proportion to the severity of the movements. He had had large experience in the treatment of sunstroke, and he thought that in this case hydro-therapy achieved some of its greatest triumphs. The patient's life usually depended upon the prompt and vigorous application of external cold. In typhoid fever he had for some years adopted Brand's method, and was in the habit of applying it systematically and strictly. He was of opinion that the use of cold baths in typhoid fever made a difference of not less than 3 or 4 per cent. in the mortality; and, troublesome and arduous as was this method of treatment, he would continue to regard it as his duty to employ it until some other method of affecting the mortality to the same extent was devised. He was disposed to think that relapse was somewhat common after the cold bath treatment, but his statistics did not warrant any positive conclusion on this head.

Dr. JAMES BARR (Liverpool), after dwelling on the part played by the nervous system in the regulation of bodily temperature, said that the combustion of 124 grains of carbon produced as much heat as would raise 140 lb. of water 1° C., showing how easily the pyrexial process could be established and maintained. With new antipyretic agents he admitted that we could control temperature; but as the drugs have no effect on the causes of the pyrexia their use in continued fevers was irrational. He relied for the reduction of pyrexia on the physical agents of air and water, combined with rest; but the air and water, being very bad conductors, require to be administered in currents.

Dr. SHINGLETON SMITH (Bristol) thought the introduction of the modern antipyretics had obviated the necessity for the cold bath, except in hyperpyrexia.

Dr. MARKHAM SKERRITT (Bristol) was glad that the general tone of the discussion was to discourage the routine use of antipyretic drugs. Dr. Lindsay had spoken of twenty grains of quinine as an average antipyretic dose. He thought thirty, or even forty, grains might often be given with advantage.

Dr. DOUGLAS POWELL (London) thought we must look at the subject of pyrexia from two points of view—the point of view of the microbe and of the nerve centres. He agreed with the general position of Dr. Hale White and was

disposed to deprecate the systematic use of antipyretics. We could drive the temperature from point to point, but rarely with benefit to our patients. He had found some advantage in the combination of phenacetin and quinine.

Mrs. GARRETT ANDERSON, M.D., thought sufficient attention had not been given to idiosyncrasy in connexion with pyrexia.

Dr. POPE (Leicester) advocated the cold bath treatment of typhoid fever.

Dr. TYSON (Folkestone) advocated aperients in the milder degrees of pyrexia. He denied that pyrexia was necessarily a contra-indication for a patient undertaking a journey.

Sir T. GRAINGER STEWART (Edinburgh) thought no one could possibly be entirely opposed to the cold bath in pyrexia. He did not rely upon the cold bath in ordinary cases of typhoid fever, but rather upon cold or tepid sponging, ice-cloths to the stomach, &c. He used the cold bath in severe cases, and preferred the graduated bath.

Mr. W. G. KEMP (New Zealand), Dr. HEATH (St. Leonards), and Mr. MAHOMED (Bournemouth) joined in the discussion, and, Dr. ROBERTS having summed up, Dr. HALE WHITE replied, expressing his satisfaction that his paper had given rise to such an interesting and valuable debate.

Dr. ARTHUR J. M. BENTLEY read an interesting paper upon Practical Hints to Invalids on the Maintenance of Health in the Climate of Egypt. He urged that carelessness, indifference to medical advice, and indiscreet amusements were responsible for many failures of treatment in Egypt.

FRIDAY, AUG. 3RD.

Dr. FREDERICK ROBERTS took the chair at 9.30 A.M., and after a few preliminary observations called upon Dr. J. A. ORMEROD to open the discussion upon:—

Ataxia and the Diseases of which it is a Symptom.

The following is an abstract of Dr. Ormerod's remarks:—

The appended explanation is advanced of the term "ataxia." Almost all voluntary movements require for their due performance the action of more than one muscle, and most of them the action of many muscles; a proper set of muscles must act, and in a proper way. The muscular harmony is termed "coördination," and the failure of it "incoördination" or "ataxia." When movement is the object of the muscular contraction, such failure is termed "motor ataxia;" when preservation of a fixed position, "static ataxia." "Ataxia" may be contrasted with "paralysis" thus (Mercier). When all the muscles engaged are *proportionately* enfeebled there is paralysis or paresis of the movement; but when the *ratio* between the strength, time, and duration of their contraction is disturbed then there is "incoördination or ataxia." If, further, we add that coördination is a function of the central nervous system, we shall exclude certain instances where by reason of a peripheral paralysis of isolated muscles a movement comes to be performed irregularly—e.g., the high-stepping gait of a patient suffering from paralysis of the extensors of the toes. Nevertheless, it may well be that in certain diseases of the nerve centres the distinction between ataxia and paralysis will be hard to draw; failure of motor force and failure in adjustment of force may often be combined.

Where are the centres which produce coördination, and what is their mechanism? We do not know; but we may suppose that there is no one "coördinating centre" for all and every kind of movement, but rather, since coördination is necessary for almost every movement, that this function is closely connected with the action of every motor centre, from those of a low grade up to those of the highest grade. Thus ataxia might be caused by disease at very various levels, and might conceivably manifest itself in very various ways. The disease of which ataxia is most characteristic—viz., tabes dorsalis—is, however, mainly a disease of white fibres. Two main theories exist to account for this production of ataxia by disease of conducting fibres. 1. *The sensory or reflex theory of Leyden.*—Movements are learnt by attention to incoming impressions from eyes, semi-circular canals, skin, joints, and (above all) muscles; and when the movement has been thoroughly acquired these impressions still act as guides to the coördinating mechanism; the initiation is voluntary, but the muscular adjustment is reflex. Thus disease of afferent fibres may cause ataxia by blocking or perverting their guiding impressions. 2. *The motor theory of Erb.*—Erb urges that cases of ataxia exist where no affection of sensation is discoverable, and cases of anæsthesia without ataxia, and that therefore the theory just mentioned is untenable. He thinks the block must be on the efferent side of the centre, that possibly efferent fibres exist in the posterior columns down which "coördinating impulses" are transmitted, and that these fibres are affected in tabes. But the existence of such fibres is as yet hypothetical. Recently it has been suggested (Sydney Kühn) that the ataxia of tabes is a cerebral symptom and has nothing to do with the lesion in the fibres of the posterior columns.

The clinical characteristics of ataxic movements must be mentioned. Ataxia in the upper limbs reveals itself by a clumsiness and want of precision in delicate manipulations and in accurate guidance of the limb, particularly when the eyes are closed. In the lower limbs the most important manifestations of ataxia are in standing and walking, actions for which the muscles of the lower limbs must be coördinated with those of the trunk. There are two types of ataxic gait: (1) that of advanced tabes, in which the feet are lifted with a flourish and brought down with a stamp; and (2) that of cerebellar disease, in which the gait is swerving and reeling, like that of a drunken man. But in tabes, when the ataxia is less advanced, we may notice only an unsteadiness of gait and uncertainty of movement, particularly when the patient cannot watch his feet. Again, he may stand firmly, but when his feet are put together and his eyes closed he sways, and may fall (Romberg's symptom).

Ataxia may result from disease of very various parts of the nervous system. Following an anatomical classification, we may enumerate ataxia from disease of the cerebral hemispheres as exemplified by post-hemiplegic ataxia (Gowers), ataxic gait in children who have defective cerebral development, and hysterical ataxia. Ataxia from cerebellar disease.—It must be noticed that Dr. Hughlings Jackson maintains that the cerebellar reel is not due to incoördination at all, but to weakness of the back muscles. The trunk, being feebly supported, tends to fall over to one side, and the legs have to run after it to prop it up. Hence the staggering gait. He has lately (with Dr. Risien Russell) demonstrated weakness of the back muscles in a case of cerebellar disease. Ataxia associated with ophthalmoplegia, from disease in the neighbourhood of the corpora quadrigemina (Nothnagel).—Acute ataxia, so called, coming on in the course of febrile diseases, and associated with a peculiar affection of speech (Westphal, Whipham and Myers, Dawson Williams), possibly due to disseminated lesions in the pons and medulla (Leyden).—Ataxia from spinal disease (perhaps the commonest form) may be caused by various lesions, but *par excellence* characterises disease of the posterior columns of the cord. In tabes dorsalis it is often quite a late symptom; the disease may be diagnosed prior to the appearance of ataxia by the combination of lightning pains, absence of knee-jerks, and reflex irido-plegia. In ataxic paraplegia ataxy is combined with true motor weakness. Post mortem there is disease of the lateral as well as of the posterior columns. This may occur in paralytic dementia, in Friedreich's disease, in pernicious anæmia (Minnick, Bowman), and as an independent disease.—Ataxia from disease external to the central nervous system; from disease of the posterior nerve roots (Hughes Bennett), important as corroborating the reflex theory of ataxia; from peripheral neuritis, commonly caused by alcohol or metallic poisoning, or else post-febrile (diphtheritic ataxia), and very important to diagnose from true tabes because the prognosis is better.—There is a class of cases to which the term "hereditary ataxia" is applied, because the disease runs in families. Apparently there are two or three types. Firstly, the type described by Friedreich. This clinically resembles tabes in the presence of a progressive ataxia with (usually) absence of knee-jerks. But the disease developes earlier in life and tends to run through a family; pains, sensory affections generally, and other outlying symptoms of tabes are absent; and the pupils are normal. On the other hand, speech is affected, nystagmus may supervene, and there may be deformities of the feet and of the spinal column. Necropsies have shown a small (ill-developed) nervous axis, with degeneration of the posterior and lateral columns of the cord. Secondly, a type recently described by Sanger Brown—"family" ataxia, with absence of sensory troubles, but with retention of knee-jerk, a peculiar explosive speech, spasmodic movements of the limbs, and eye symptoms which are also peculiar. The nature of the lesion is not yet known; some authorities believe it to be a cerebellar affection. Lastly, Dejérine and Sottar have described a family disease in which the symptom of ataxia is combined

with muscular atrophy, and in which post mortem they discovered an interstitial neuritis, beginning in the nerve branches and spreading up the nerve trunks to the posterior nerve roots.

Dr. ANDRIEZEN (Wakefield), in an interesting speech, dealt with ataxia as occurring in the insanities, and expressed his sense of the great value of Dr. Ormerod's paper.

Dr. WALDO (Clifton) considered the ataxia of cerebellar tumour to be confined to the legs. The ataxia of hysteria seemed to be due to anæsthesia. He quoted cases in support of his views.

Dr. DAWSON WILLIAMS (London) said ataxia might follow any of the acute diseases, including malaria. Some of these cases ended fatally, while others recovered. This association of ataxia with acute diseases lent some support to the view that syphilis was the cause of tabes.

Dr. GORDON (Exeter) thought that there had been a great lack of correct classification of the subject on the clinical side.

Dr. MICHELL CLARKE (Clifton) pointed out that in hereditary ataxia there was no predominant affection of the posterior root. It was the long running fibres that were chiefly affected, whereas in true tabes it was the short running fibres. These differences might be due to the fact that the two diseases came on at a different stage of development. He thought ataxia was extremely rare in hysteria. He believed that treatment was successful chiefly by restoring the patient's confidence. He showed a patient with well-marked tabes, in whom the knee-jerks were still present, although the disease had existed for eight years. The patient had nystagmus.

Dr. ROBERTS, in summing up the debate, expressed his sense of the great value of Dr. Ormerod's exposition of a difficult and obscure subject. He would advise all present not to miss the opportunity of examining the beautiful specimens of spinal lesions which were on exhibition by Dr. Michell Clarke in the Pathological Museum. He thanked the Section for the cordial support which he had received in discharging the duties of the chair.

The proceedings then terminated.

SURGERY.

THURSDAY, AUG. 2ND.

The Section was opened by a discussion on :—

The Surgical Treatment of Injuries of the Spine and Spinal Cord.

Mr. WILLIAM THORBURN (Manchester), who introduced the subject, said that he should content himself with stating, as briefly as he could, the opinions which he held himself, without extensive reference to those of others, and in doing so to give a general account of the subject rather than endeavour to develop any absolutely new views of pathology or of treatment. The injuries of the spine could be divided into eight headings : (1) unilateral dislocations ; (2) bilateral dislocations with persistent displacement ; (3) bilateral dislocations with recoil (diastasis) ; (4) fracture of the bodies with persistent displacement ; (5) fracture of the bodies with recoil : (6) fractures of the laminæ (spinous processes) &c.; (7) compound fractures ; and (8) secondary lesions, as hæmorrhage, meningitis, &c. Certain of these classes were at once intelligible, but to some of them a few words of explanation should be given. Thus, unilateral dislocations could be set aside, which were generally, if not invariably, met with in the cervical region ; injuries of the laminæ and processes, which were very rare ; compound fractures, which were usually the result of gunshot injuries ; and the class of secondary lesions. Having eliminated those, the vast majority of the injuries now being considered fell into the second, third, fourth, or fifth class—i.e., they were bilateral dislocations or fractures of the bodies of the vertebræ. Fractures and dislocations were constantly associated together, but for the present purpose the distinction between these two conditions was one of no importance and reference would be made to true dislocations, pure fractures, and "fracture dislocations" collectively, the point to be remembered being that in nearly all these cases the upper segment of the vertebral column was displaced downwards and forwards, and the theca vertebralis was thus crushed between the body of the vertebra below and the arch of that above. A very important practicable distinction, however, was that which existed between cases in which the displacement was followed by recoil of the injured bones and those in which the displacement was a persistent one. In the first class the cord was crushed, and then at once released by nature ; in the second it was crushed, and continued to be compressed between bony surfaces. His experience had led him to believe that in the cervical region cases of recoil were commoner than those of persistent displacement in the proportion of about two to one. In the lumbar region his pathological material would indicate that persistent displacement was more common ; but this material was a fallacious guide, inasmuch as only the most severe lesions led to a necropsy. In the dorsal region his cases were too few to allow of any statistical deductions, but in every part of the vertebral column he had found both varieties of injury—namely, both recoil and persistent displacement. There were four methods of treatment available in these cases : (1) expectancy ; (2) reduction of displacements ; (3) laminectomy ; and (4) fixation by plaster-of-Paris or other form of support. It was not needful to refer to the expectant method of treatment, but he was anxious to point out that life may be occasionally indefinitely prolonged even in apparently hopeless cases, as in Hilton's celebrated case, and in one of his own in which there was a fracture—dislocation of the third dorsal vertebra, with total paralysis and anæsthesia below that level—in a woman who had been under his observation for five years and a half. So far as the reduction of displacements was concerned, no such proceeding, of course, was required, or, indeed, possible, in the commoner cases in which natural recoil had followed the injury. Equally, also, in fractures of the laminæ, compound fractures by direct violence and in the secondary lesions reduction in the ordinary sense of the term was not called for. Hence this method of treatment was applicable only to the first, second, and fourth group of cases. Again, in unilateral dislocations the condition was most favourable to reduction. He had collected from various sources forty-one cases in which reduction of a unilateral luxation had been attempted, and in thirty-five of these the result had been apparently successful. Of the more important cases of bilateral luxation, he had had but five personal observations, the cases having been under the care of several of his colleagues. Two of the injuries were in the cervical region, and attempts at reduction under an anæsthetic failed in both. Three were in the lower dorsal region, and in each of them the position of the spine had been apparently rectified, but in all the displacement had returned in spite of fixation by plaster jackets. It should not be forgotten that these manipulations in the cervical region were dangerous, and that injuries of the atlas and axis were quite unjustifiable ; also that in the upper and middle dorsal region the attachment of the ribs not only rendered reducible displacements rare, but interfered with the proceedings. On these grounds he should limit the useful sphere of manipulation to unilateral cervical dislocations and to bilateral displacements in the lower dorsal or lumbar region, and he should regard it not so much in the light of a radical treatment of the cord lesion as of an advantage at a later date should recovery ensue. With regard to laminectomy he should say that, save in certain special conditions, he did not believe that laminectomy was likely to be of any service in injuries of the spine and spinal cord. First, the commoner cases, in which the crush was followed by recoil, clearly did not call for laminectomy ; secondly, these cases generally died, or at least no recovery of the functions of the cord took place ; thirdly, such evidence as we possessed indicated that the human cord was incapable of repair after crushing—thus a study of wounds of the cord by sharp instruments showed that the region actually cut did not regenerate ; fourthly, he had not found, either in published records of some 200 cases or in personal experience of seven, any clear evidence of benefit from the operation. Nevertheless, laminectomy could be employed—(1) in compound fractures ; (2) in injuries of the laminæ and spinous processes with lesion of the cord where the crush had probably been incomplete ; (3) when the symptoms were mainly or entirely due to thecal or perithecal hæmorrhages ; (4) in pachymeningitis or peripachymeningitis, which may follow an injury after a very long period ; and lastly, in cases of compression of the cauda equina. The use of the plaster jacket as an adjunct to laminectomy, to reduction, or to spontaneous recovery was of the greatest value, and probably all surgeons would apply it after the first few weeks in a case which was otherwise doing well. Its use, however, at an early stage was more questionable, as it had the disadvantage of possibly causing sores, and, in cervical cases,

of embarrassing the respiration, whereas it could have no positive beneficial effect, and could only prevent secondary displacements.

Dr. ROBERT W. LOVETT (Boston, U.S.A.) stated that his personal experience of fractures of the spine extended to 168 cases and eight laminectomies, and of one in the hands of his colleagues. His method of treatment in these fatal cases, as described in 1887, was as soon as possible after the injury to anæsthetise the patient, then suspend him, and to crush back by force the deformity into a relatively normal condition. A plaster-of-Paris jacket was applied in the suspended condition, and in a few instances brilliant results were obtained. At the time mentioned he reported 82 cases of fracture of the spine, and since then he had frankly to confess that he had given the treatment up, as he deemed it of less value than a carefully performed operation. It seemed to him that all fractures of the spine, including those of the cervical region where there was paraplegia or deformity, should be operated upon unless contra-indication exists in the way of shock. This operation should be immediate, for irremediable damage occurs to the cord by pressure alone. The end of the subject had not yet come. To his mind the statistics he had quoted were suggestive. Practically the condition of the cord was the key to the problem of whether the patient was to recover or not. If the cord were torn in two, operation was without avail; if it was pressed upon, surgical interference might be of great value. Of his eight cases of laminectomy, three of them were performed for spinal caries and paraplegia. Two of them were brilliant successes; one of them died. The other four cases were for fracture of the spine, one alone of which was successful, one died, and the other two recovered, useless. In none of the cases of laminectomy had he been able to operate earlier than on the fourth day after the injury, and he was strongly of the opinion that our next step would be to operate within the first twenty-four hours.

Mr. C. B. KEETLEY (London) said his experience was small, and had not been sufficient to enable him to lay down any rule of treatment. He had collected the notes of eleven cases under his care. He thought that no surgeon ought to make up his mind that operative interference was hopeless in these cases. The surgeon should be ready, but not eager, to operate. Great benefit might be expected from plaster-of-Paris jackets in fractures of the dorsal spine. He did not think there was so much distinction between compound and simple fractures of the spine as laid down by Mr. Thorburn—*a priori* it would be absolutely safe to trephine the spine, but surgeons had not found this to be the case.

Mr. GILBERT BARLING (Birmingham) was in general accord with the opinions expressed by Mr. Thorburn. He thought, however, that many cases had been operated on unnecessarily. In a large number of cases of fracture of the spine it was impossible to say what the nature of the injury was. Unless, therefore, the cases were selected the operations were likely to bring great discredit upon the surgical treatment of this class of injuries. He referred to the case of a man who was forcibly doubled up while passing underneath an arch. The man was brought to the hospital suffering from complete paralysis of the lower extremities and bladder. There was some slight displacement of the dorsal spine. A box splint was applied, and after the lapse of some weeks partial recovery of power over the bladder took place. Ultimately the improvement came to a standstill and an operation was suggested to the patient with a view to relieving the pressure upon the cord. This was declined and eventually the man recovered sufficiently to enable him to return to his work.

Mr. W. M. BARCLAY (Bristol) had had personal experience of four cases of fracture of the spine, and had seen others under his colleagues' care. He thought that there should be no hesitation to operate in these cases. There could be too much caution. Where the displacement persisted the patient should be given whatever benefit an operation might be likely to bring. He considered that a too hopeless view of operative treatment should not be taken.

Mr. DAMER HARRISSON (Liverpool) had had a large experience of these cases at Liverpool, owing to men falling down into the holds of ships, and to bales of cotton falling from a height upon the heads of persons standing underneath. The difficulties of diagnosis were great. But he had seen the most hopeless cases recover. His practice was to perform an early perineal section where there was paraplegia. By this means he obtained complete control over the bladder, and was able to ward off cystitis and to keep the patient dry and clean.

Sir WILLIAM STOKES (Dublin) said that if laminectomy did not release pressure in bilateral displacements without recoil, he did not see how gouging out the body of the vertebræ could be justifiable. He was accustomed to flush out the bladder with warm boric solution, and he did not agree with the last speaker in regard to performing perineal section.

Mr. REGINALD HARRISON (London) related two cases of fracture of the spine which had been under his care.

Surgeon-Major HATCH (Bombay) had had a large experience of these cases in Bombay. In only five cases, however, had he operated. An early operation, for various reasons, was justifiable according to his experience.

Mr. JORDAN LLOYD (Birmingham) had seen many cases of fracture of the spine recover. By rectification of position and a fixing apparatus fairly satisfactory results could be obtained. The question of operating should be determined by the nature of the injury. He related the notes of a successful case of laminectomy for fracture of the spine about the first lumbar vertebra, which had been under his care.

After some remarks by Mr. NOBLE SMITH, and an excellent summary of the discussion by the President, Mr. THORBURN replied.

Sir WILLIAM STOKES (Dublin) read a paper on the Operative Treatment of Flat-foot.

Mr. C. B. KEETLEY (London) agreed with the reader of the paper in regard to the osseous nature of the origin of flat-foot. Flat-foot was always spoken of as a very simple deformity, but this was by no means the case. There was sinking of the external arch and this was followed by the sinking of the internal arch. He strongly agreed with Professor Ogston's treatment of these cases, inasmuch as it was most satisfactory and gave the best results.

Mr. ROBERT JONES (Liverpool) read a paper on a case of Amputation of the Shoulder-joint for Acute Spreading Traumatic Gangrene. The patient was a man aged thirty-two, and the gangrene had extended as high as the apex of the axilla and the acromion. The stump was treated with pure carbolic acid. The patient made an excellent recovery.

Mr. JORDAN LLOYD said he had operated upon a case of the kind only two days ago, which so far promised to do well. In some cases whatever may be done the gangrene does not cease.

Mr. KENDAL FRANKS (Dublin) read papers on: (1) Œsophagectomy, with remarks on the treatment of Œsophageal Stricture; (2) a case of Anal Fibroids; and (3) Simple Stenosis of the Œsophagus treated by Œsophagectomy.

FRIDAY, AUG. 3RD.

There was only a limited attendance on this, the third day of the meeting of the Section.

Mr. J. HUTCHINSON, jun. (London), opened a discussion on:—

The Treatment of Injuries of the Lower End of the Humerus.

He said that in fractures of the capitellum and epitrochlea (or internal condyle) only fibrous union was to be expected in many cases, and yet the result might be very good as regarded the utility of the joint. The great value in all cases of the administration of ether in order to effect a right diagnosis was emphasised, as well as the advisability of doing this at the earliest possible moment after the accident. Preference was expressed for the use of a splint made as light as possible, applied to the back of the arm and forearm, and reinforced, if necessary, by an anterior one, both being bent to a right angle. The flexed position was the one in which most muscles about the elbow-joint were relaxed, the most comfortable one during the three weeks the splint would be required, and the most favourable one should stiffening (which sometimes was absolutely unavoidable) occur. Mr. Hutchinson adduced the results of fourteen unselected cases of separation of the lower epiphysis of the humerus treated by splints in the flexed position which he had himself observed and followed up for some little time after the accident; in six there was practically perfect restoration of the contour and recovery of all movements at the elbow; in eight slight limitation of flexion and extension (twenty to forty degrees) resulted, though this would probably much improve as time elapsed, and in only one was the rotation of

the radius in the least interfered with. For this reason there seemed no necessity for the use of any elaborate splint allowing of rotatory movements of the forearm, as in old complicated fractures into the elbow it is quite exceptional for the latter to be affected. In compound fractures into the joint a formal excision was rarely required, though if the diaphysis protruded through the skin experience proved that the best course was to resect the protruding end. Out of the seven cases of compound separation of the lower epiphysis treated in this manner six recovered with very useful arms. Passive motion before the fragments were well bound together was both painful and liable to result in fibrous union, and hence it was not advisable in most cases of fracture into the elbow-joint before three weeks had elapsed.

Dr. J. WARD COUSINS had treated a large number of cases of fracture about the elbow-joint. He believed in excising the joint in severe cases, whether the fracture was simple or compound. The operation was not a serious one and the results were good.

Mr. ROBERT JONES thought that full extension, then full supination, then complete flexion, constituted the best routine method of treating these cases. Passive motion should be avoided until after three weeks. He never used splints save when the fractures were compound.

Mr. C. M. MOULLIN (London) read a paper on the Treatment of Enlargement of the Prostate by Removal of the Testes.

Mr. MAYO ROBSON (Leeds) read a paper on a Consecutive Series of Ovariotomies performed in the Surgical Clinic at a General Hospital. The series included a total of 216 cases, of which 202 recovered and 14 died; in other words, a mortality of 6·52 per cent. These cases included those of suppurating and perforating peritonitis and gangrene of the gut.

After some remarks from Mr. N. C. DOBSON (Bristol), Dr. MURPHY (Sunderland), and the President, Mr. ROBSON replied.

This concluded the business of the section, and a cordial vote of thanks having been passed to Mr. MITCHELL BANKS for his services as President, as well as to the other officers of the section, the members dispersed.

Erratum.—We last week, in reporting Mr. Pearce Gould's introductory speech upon the operative treatment of intestinal ulceration, by a slip, referred to the proposal of laparotomy in such cases, first made eleven years ago, as emanating from Mr. Greig Smith, instead of from Mr. N. C. Dobson.

OBSTETRIC MEDICINE AND GYNÆCOLOGY.

WEDNESDAY, AUG. 1ST.

Induction of Premature Labour.

Dr. ROBERT BARNES read an address on the Induction of Premature Labour, which we give *in extenso* in another part of this issue. In the discussion which followed:—

Dr. BOXALL said Dr. Barnes' excellent opening left little to be added, but two conditions might be mentioned in which the advisability of inducing premature delivery might also require consideration. In severe and rapidly progressive varicosity of the veins, especially about the vulva, the termination of pregnancy was sometimes necessary to obviate the risk of rupture and death from hæmorrhage. The advisability of adopting a similar proceeding as soon as the possibility of pregnancy could be established had also presented itself in more than one case of chronic endometritis associated with repeated abortions, in which, after treatment had been commenced, the patients, in spite of warnings, became pregnant. As the fœtus in such cases was practically certain to die sooner or later, and the prolongation of the pregnancy to a late period only served to intensify the endometritis and to postpone the case indefinitely, the question naturally arose whether it was not advisable to terminate the pregnancy as soon as discovered. He agreed in recommending the removal of ovarian cysts during pregnancy and as soon as possible, and also mentioned a case operated on by him at the half-month delivered eventually at term. In fibro-myoma of the uterine wall Dr. Boxall was also, as a rule, disposed to let the pregnancy go on to term, for he had on several occasions seen patients with interstitial fibroids bear even twins without difficulty.

Dr. HEYWOOD SMITH said, with regard to one cause—viz., fibroids—each case must be well considered. He recently had a case of sessile fibroid and ovarian cyst. One obstetrical physician advised induction of labour at once (third to fourth month). As he (Dr. Smith) did not agree with this, and rather inclined to ovariotomy, he called in another medical man, and they agreed to let matters alone. At two-thirds through the pregnancy it was found that the ovarian tumour was drawn up out of the pelvis, and the fibroid was flattened out. This woman was delivered at term of a living child. She subsequently had phlebitis, and before he could see her again she had become pregnant for the second time. In larger and multiple fibroids Porro's operation was frequently indicated.

Dr. MORE MADDEN said, in discussing induction of premature labour, it was necessary to refer, however briefly, to the circumstances which justified or required it, and to the methods by which this object might be accomplished. He continued: "Being debarred by the scope of the present paper from alluding to the obstructive class of causes for induction of premature deliverance, we may here consider this operation as one that may be justified in cases where the safety of either the mother or the child is gravely endangered by the continuance of gestation to its full term. In the first category are included many cases of serious cardiac or renal disease, aneurysm, abdominal or pelvic tumours, on which increasing pressure of gravid uterus would probably exert a directly injurious effect. It may also be justified in some cases of abdominal or other dropsical oppression, or of albuminuria, or of impending eclampsia, as well as in certain instances of hæmorrhage before delivery. In all such cases we consider equally what is best not only for the safety of the mother but also for that of the child. In the second place, premature labour may be induced, always bearing in mind the safety of the mother, with the object of saving the child in cases where in previous pregnancies the fœtus has perished (and at a period compatible with viability), either from specific or syphilitic disease, placental disease, or constitutional causes. That period of viability may, roughly speaking, be regarded as at almost the end of the seventh month. The methods by which induction of premature labour may be accomplished are: (1) ample digital dilatation of the os with or without rupture of membranes, which, although affecting and exciting uterine action, should, if possible, be avoided; (2) introduction of a flexible catheter; (3) vaginal injection; and (4) Dr. Barnes' bag."

Professor BYERS said that in cases of persistent vomiting, where rest, diet, and medication have failed, labour should be induced. These cases were few in number. As to the presence of albumen, this in itself was not in all cases to be considered as an indication for terminating the pregnancy. Each case was to be dealt with by itself, and recent statistics showed that Veit's plan, by injecting morphia, gave in many cases good results.

Mr. E. HASTINGS TWEEDY, assistant master to the Rotunda Hospital, said that in the absence of Dr. W. Smyly the Section might be interested to know the views held as regarded the induction of premature labour in the Rotunda Hospital. He said: "It is there looked upon as a dangerous operation, only to be resorted to under the rarest conditions. For albuminuria it is never performed, for in the first place we know that only 2 per cent. of women suffering from this condition become eclamptic, and we cannot say beforehand which of these will develop the disease. Even did we know this much, we still would not dream of inducing labour, as we believe it enormously adds to the severity of the fits and is likely to induce them if the attacks have not as yet occurred. Morning sickness must very rarely require this heroic treatment, and as regards ovarian tumour complicating pregnancy I should think that operation, when first the tumour is discovered, will give results infinitely superior to those obtained by the induction of premature labour."

Dr. FREDERICK PEARSE observed that, while in most cases they should lean to the view of postponing the operation if possible, he thought that the Dublin School was going to an extreme in refusing in nearly all cases to resort to it. They had to remember it was the subsequent life-history of the patient and not merely a question of life and death that they had to contemplate. The operation, in suitable cases, would probably save a patient from continued ill-health. He also felt that too much consideration had been given as to the viability of the child. The question did not influence his opinions. He held, therefore, that, whether convulsions, phthisis, albuminuria, or heart disease existed, the condition of the mother was the sole guide to action.

Mr. JOHN W. TAYLOR (Birmingham) said there was a class of case, and especially a stage in that class, on which

more light was required. These were cases of nephritis, with albuminuria and œdema, in moderately advanced pregnancy. He continued: "In later cases, where the child is both living and viable independently of its mother, there can, I think, be but little doubt that the induction of premature labour under these conditions is the best treatment both for mother and child; but at an earlier stage, about the fifth or sixth month, when the induction of labour must necessarily terminate the life of the fœtus, the question is a difficult one. In some cases there may be an evident dependence of the nephritis on the pregnancy, but in other cases the disease may definitely follow exposure to cold and be rather intercurrent with the pregnancy."

Dr. AUST LAWRENCE regarded the question of inducing labour for disease as a very serious one and demanding a thorough knowledge of these diseases as well as of the obstetric question. His opinion was that, if the diseases could not be checked in spite of all treatment, then and then only should labour be induced.

Professor WRIGHT (Leeds) named a case of severe ptyalism during the third month of pregnancy which imperilled the life of a patient. Abortion was induced with success. He believed that where an ovarian tumour was detected during gestation it should be removed at all risk. Abortion would generally occur at the early stages, but this did not interfere with recovery. The abdomen might be opened at the fourth or fifth month without ending pregnancy. If ovarian growths were left, they might lead to sudden death after labour or suppuration of the cyst. He quoted cases in support of these views. He preferred a bougie to a catheter for inducing labour, and the Barnes' bags with loose cornua, which tuck in at the borders, to the older form.

THURSDAY, AUG. 2ND.

Dr. W. J. SMYLY, Master of the Rotunda Hospital, Dublin, opened a debate upon

The Treatment of Hæmorrhage during the Last Two Months of Pregnancy.

As we have already said, the speakers did not strictly confine themselves to the subject set down for discussion, although this did not deprive the debate of its usefulness or interest.

DERMATOLOGY.

THURSDAY, AUG. 2ND.

The Management of Eczema.

In opening a discussion on this subject Mr. MALCOLM MORRIS said opinions still differed as to whether eczema was constitutional or local in origin. His own view was that, although a constitutional dyscrasia such as gout, glycosuria, kidney disease, rheumatism, or scrofula might have a serious modifying influence on the local process, the *causa causans* was, in the majority of cases, the action of micro-organisms. He was also of opinion that seborrhœa often prepared the way for eczema by making the skin vulnerable by microbes. He thought, however, that Unna went too far when he taught that eczema was always and in all cases the result of microbic action. He (the speaker) had often seen the disease arise on perfectly healthy skin, apparently as the result of nervous disturbance. Even in these cases he thought it probable that the parasitic factor played a leading part in the process, the inhibition of trophic influence in certain parts of the skin creating weak points through which microbic invasion could take place. The management of eczema must in every case be carefully adapted to the special indications present. Mr. Morris assumed that eczematous lesions should in all cases be cured as rapidly and as thoroughly as possible without fear of the "depraved humours" "settling on" the lungs or other internal organs. Of the numerous cases he had treated, in not one had he seen the slightest ill-effect follow the cure of eczematous lesions. He suggested the following points for special discussion: 1. Are internal remedies required in eczema? If they are, what are the precise indications which should guide the use of them? 2. The influenza of diet in eczema. 3. What are the principles on which the local treatment of eczema should be carried out? 4. How is the tendency to recurrence of eczema in those predisposed to the disease to be overcome? Is there any plan of alterative treatment by which this result is brought about? 1. With regard to the first of these, Mr. Morris held that as a general rule, the less internal medication there was in eczema, the better. A constitutional dyscrasia underlying the skin affection must of course be treated on the ordinary principles of medicine. In an ordinary chronic eczema, where there was no reason to suspect any dyscrasia, he trusted entirely to local treatment. Internal remedies should be given in accordance with definite indications. When the lesions were acutely inflammatory he found antimonial wine valuable, the indication for the drug being the presence of arterial tension, and depression being a positive contra-indication. If there were a neurotic element in the case, sedatives (opium, or, if that disagreed, sulphonal &c.) and nerve tonics (especially quinine and phosphorus) should be combined with local treatment. Arsenic was unreliable and if given in inflammatory conditions did harm instead of good. In like manner iron was contra-indicated by acute inflammation. Malnutrition and anæmia should be treated on ordinary principles, and any source of peripheral irritation that could be discovered should, if possible, be removed. 2. With regard to diet, Mr. Morris believed it had no influence at all, except indirectly, by intensifying constitutional conditions such as gout or glycosuria, or by disordering the digestion and causing vaso-motor disturbance. Apart from these indications, he had seen no reason to believe that restrictions had any good effect in eczema. 3. As regarded local treatment, speaking generally, he treated every case as if it were of parasitic origin. He began with a very weak parasiticide and felt his way to the use of stronger applications, taking care not to set up any irritation. The best remedy for local use in dry chronic eczema, especially of seborrhœic origin, was, in his experience, sulphur, and next to that he placed resorcin. These drugs had the special advantage that they not only destroyed the micro-organisms on the surface but caused exfoliation of the horny layer and so brought away the microbes which had penetrated to the deeper parts of the epidermis. When the inflammation was acute, ichthyol was particularly useful. Other antiparasitic remedies useful in eczema were salicylic acid, white precipitate, and boracic and carbolic acid. For very persistent chronic eczema of the flexures chrysarobin was of service. 4. As regarded the fourth point, change of climate with complete rest of mind and body was often useful. The particular climate suitable in different cases was largely a matter of idiosyncrasy. Spas were beneficial chiefly in obstinate chronic cases. On the whole, the sulphur springs—especially those of Harrogate and Strathpeffer—were the best for external use. The internal use of sulphur waters was particularly indicated when gout or rheumatism underlay the skin affection. Chalybeate and arsenical waters were useful in cases in which general tonics were indicated. Alkaline waters did not seem to be of any particular use, even in gouty subjects. In many cases the waters of Bath did good.

Dr. MAPOTHER referred to the management of one form of eczema—the oozing, post-vesicular—especially of the adult and the aged. Having always held that uric diathesis was causative of this condition, he had used for the last two years that wondrous solvent of the urates, piperazin, with most satisfactory results. The only other drug employed was a blue pill—about once weekly—which acted either as a cholagogue or an eliminant of uric acid. Copious drinking of pure water promoted diuresis and relieved the constipation so usual. When carbonated it was more agreeable, and lithia was often a useful addition. Of dietary articles, fresh fruits and unboiled vegetables were of great use. As to local measures, he thought ablution of the part several times daily, and of the whole skin, as by a sponge-bath once a day, was essential. In Dublin and Glasgow the water supplied was practically pure, holding some four grains of solids to the gallon, and in London distilled water was delivered at 6*d*. per gallon. Ablution was needed to remove the irritating and probably toxic materials which oozed out. Of course the water should be tepid, and the drying should be done with the greatest gentleness. The continuous application of water often brought out a rash, but such was substitutive of the eczema, often curative, and at any rate, like drug rashes, would cease on removal of the cause. To refer to one most common site—the leg—he usually applied a single layer of old linen and a cheese-cloth bandage, to be frequently moistened and renewed at least twice daily. When the case was acute, horizontal rest was needed, but inactivity promoted the constitutional condition, which he thought causative, and passive exercise in the open air was always admissible. In a few cases connected with varicose veins rubber bandages were useful. For the initial step—the removal of crusts—he had found spongiopiline

soaked in water, sometimes with a little soft soap dissolved in it, efficient. Although he was against sealing up the discharging surface, he acknowledged that, for the night, to prevent itching, vaseline with a little ammoniated mercury should be smeared over the surface.

Dr. BOWLES spoke of the good effects of keeping the skin in eczema always covered with oil, especially Deelin oil. Dr. Unna was the first (in 1881) to re-establish the credit of sulphur as a remedy in eczema. He insisted on the importance of suiting remedies to the particular case. As regarded the bacillary origin of eczema he was glad to see that, even in England, the idea was not at present considered so ridiculous. He was able now to demonstrate a micrococcus which would, he believed, be generally accepted as the microbe of the disease. He spoke of the importance of sealing the surface from the air and recommended ichthyol internally and externally.

Dr. MACKENZIE considered that in the majority of cases external medication was sufficient. Diet exercised little or no influence on the eczema itself, but, of course, must be considered if gouty, dyspeptic, or other conditions were present. He agreed that the main principles of treatment were to soothe the inflamed surface and to use antiparasitic applications, the first being, in his opinion, most important.

Mr. JEFFERIES (Bolton) related a case of a child, cured rapidly of an acute attack of eczema, developing shortly afterwards epileptic convulsions. He asked whether the central neurosis had not some relation with the rapid cure of the eczema.

Dr. PEARSE (Southsea) applied alkaline remedies to relieve and cure eczema—viz., a weak solution of liquor potassæ or carbonate of soda, and had had for many years great success.

Dr. NORMAN WALKER had found ointment not always the best application, liniments and lotions being often preferable.

Dr. ROBERTS (Chester) recommended fomentations of poppyheads. He still used oleum Deelinæ with success.

Mr. MALCOLM MORRIS replied.

Dr. ABRAHAM exhibited an improved form of his Apparatus for the Application of Germicide Fluids to the scalp under pressure. The instrument was now being made and supplied by Messrs. Arnold and Son of Smithfield, and it served its purpose in his hands admirably. Several obstinate cases of ringworm of the scalp, which had long resisted other methods of treatment, had been cured in a comparatively short time. There were certain practical details to be remembered in using this instrument. He hoped that it would be found useful by other practitioners.

Dr. T. COLCOTT FOX gave the following account of an interesting case of Mycosis Fungoides. A labourer aged fifty years suffered from an intractable eczematoid dermatitis, patchy at first, but becoming more and more generalised and ultimately universal, with much infiltration of the skin. There was intolerable itching throughout, which led to deep excoriations. Then multitudes of small nodules evolved in the thickened skin and were for the most part only detected by the touch. After about three years larger tumours developed, but were not very prominent. The malady pursued a progressive but remittent course, with gradually increasing failure of strength, and the patient, after four and a half years' illness, died of cerebral thrombosis (?). No visceral changes and no leucocytosis were ever detected. The larger growths presented the histological features usually characterising mycosis fungoides, and Dr. Fox agreed with those who considered the growths as granulomata. No microorganism could be found, though the malady was probably the result of an infection. He remarked on the rarity of a universal dermatitis in mycosis fungoides, and compared the case with the somewhat analogous maladies in which a leucocytosis had been observed—e.g., lymphoderma perniciosa and leucæmia cutis.

Dr. G. G. STOPFORD TAYLOR also read a paper on the same subject.

Dr. UNNA gave an interesting demonstration of the micrococcus which he considers he has proved to be the characteristic Microbe of Eczema. He calls it "morococcus" from the mulberry appearance. It differs from the staphylococcus of pus in being found inside leucocytes. This particular organism is always to be found, he believes, in all forms of eczema. One of its great characteristics is that it must have oxygen, and the point is that it never grows in the blood, and these features are important as regards treatment. It chiefly grows in the moist crusts; hence thees must be removed, and the surface of the skin desiccated if possible.

Nervous Origin of Skin Disorders.

Dr. RADCLIFFE CROCKER opened a discussion on the Nervous Origin of Skin Disorders, illustrating his remarks by sketches. He thought that skin affections of nervous origin could be referred chiefly either (*a*) to diseases of the spinal cord—e.g., tabes dorsalis—such as papular and lichenoid eruptions, urticaria, herpes zoster, &c.; (*b*) to nerve lesions below the ganglia—e.g., erythema, herpes, bullæ, glossy skin, &c.; and (*c*) cerebral affections, and especially violent emotions—e.g., anæmia, hyperæmia of the skin, pigment anomalies, &c. He thought the nerve system acted chiefly through the vaso-motor system. It was a point of some importance, as yet undetermined, how far the nature of the nerve lesion—e.g., an embolism or hæmorrhage—influenced the kind of the skin affection; but on the whole he favoured heredity and individuality as being the chief factors in the latter.

In the discussion which followed Dr. STEPHEN MACKENZIE mentioned several cases, and one interesting case of smallpox where the patient suffered from a cervical anterior polio-myelitis resulting in atrophy and anæsthesia in the region of the shoulder, where the small-pox eruption did not attack this region. He firmly believed that the nature of the skin affection depended entirely on some special individuality or tissue proclivity, and not on the nature of the nerve lesion.

Dr. HANDFORD (Nottingham) also showed photographs and took part in the discussion.

A letter from Dr. NEVINS HYDE of Chicago was read, suggesting that a committee be appointed to arrive at some Uniformity among different nations in the Nomenclature of Skin Diseases.

Dr. STOWERS showed and described sketches of cases of acne varioliformis, Paget's disease of the nipple, melanotic sarcoma, tuberculous eruption, and an eruption which appeared after poisoning by oxalic acid.

Dr. UNNA presented a paper by Dr. EMILIO ECHEVERRA on the Histology of Savill's Epidemic Skin Disease. After describing the methods employed he went on to describe the few resemblances which the histological changes in this disease have to chronic eczema. But the differences were far greater. The inter-papillary layer of the rete is not so involved as in eczema. The granular and adjacent layers blend into one translucent layer. But the leading distinction is in a quite characteristic change in the nuclei of the prickle cells. The conclusions arrived at by this author are:—1. That Savill's epidemic disease, from a histological standpoint, is a totally different process from chronic eczema. 2. That it belongs, together with chronic eczema, to a larger group of inflammatory diseases of the skin which show new growth and scaling of the epidermis, with superficial infiltration in the cutis—i.e., to the group of catarrhs of the skin; and among these to the group of parakeratoses (Auspitz-Unna), because the special features characterising the parakeratosis—viz., the loss of kerato-hyaline in the epidermis—is common to both diseases. 3. That Savill's disease differs from chronic eczema, besides other minor points, principally by the remarkable and new sort of degeneration of the nuclei of the epidermis (the peridiaphanim of the nuclei). This nuclear degeneration is not present in any other known disease.

FRIDAY, AUG. 3RD.

The Etiology and Pathology of Acne.

Dr. STEPHEN MACKENZIE opened a discussion on the Etiology and Treatment of Acne Vulgaris. He pointed out that in acne the primary condition is a blocking of the ducts of the sebaceous glands, indicated generally by the production of comedones. This leads to inflammation of the gland behind, which frequently ends in suppuration. In some cases the inflammation is deeply seated and the perifollicular tissue involved (acne indurata). The essential cause is some peculiarity of the skin and its pilo-sebaceous appendages, which causes accumulation of the imperfectly involuted sebaceous cells and abortive hairs to block the ducts. As regards suppuration it is due to the staphylococcus pyogenes aureus and albus, and in a part open to the air with numerous little pits on the surface it is easy to understand how these gain admission to the mouths of the follicles. The question arises whether any constitutional condition favours the local peculiarity of

skin in the causation of acne. Anæmia, dyspepsia, constipation, amenorrhœa, and dysmenorrhœa and sexual malpractices were alleged to aid in the production of acne, and it was asserted by many that the acne could not be cured without attention to these. This view he strongly disputed. He discussed several of these so-called contributory causes in some detail, and showed that they bore no necessary relation to the acne. The truth was that they were all such extremely common functional derangements or disorders that they often concurred with acne, but bore no more relation to it than to psoriasis and scabies. Reverting to the local causes, he pointed out that acne occurred in parts where the sebaceous glands were large and numerous and associated with relatively imperfectly developed hairs; that it was not on the parts of the face or scalp where the hairs grew thick and strong, but that acne developed on parts where the transition took place from the thick strong hairs to the lanugo hairs. A great physiological excitation of the pilo-sebaceous glands took place at puberty, and in the heightened activity aberrations from health occurred, the ducts became blocked, inflammation followed, and if the pus coccus was present pustulation occurred. The treatment of acne resolved itself into: (1) preventive treatment; and (2) treatment of the established disease. In the prevention of acne in those whose skins predisposed them to the disease they had three things to do: (1) to remove superfluous sebum and epithelial accumulations in the ducts of the glands; (2) to stimulate the sebaceous glands into healthy activity; and (3) to keep the skin aseptic, so as to prevent the pus cocci from gaining admission to the follicles. Fortunately, at the present day they possessed remedies which were convenient, efficient, and cleanly. He thought that the profession was indebted to Dr. Eichhoff of Elberfeld, who, at the instigation of Dr. Unna, had placed medicated soaps on a scientific basis. In acne the soaps with an alkaline basis were the most efficient as they were the most powerful. The soaps most useful were the sulphur, camphor-sulphur, sulphur-camphor-Peruvian balsam, and creolin cake soaps; whilst of the powdered soaps the alkaline brimstone and creolin and the neutral salicylic acid-sulphur and salicylic acid-resorcin-sulphur soaps were best to use, and after the meeting he showed specimens of these soaps for the benefit of those unfamiliar with them. The soaps fulfilled all the conditions he had indicated as necessary in the preventive treatment of acne. They removed the sebum and accumulated epithelium, stimulated the glands, and kept the skin aseptic. They should be accompanied by bathing the skin with very hot water or steaming it. The treatment of acne when developed was as follows. All comedones should be expressed and all pustules opened; then stimulating soaps or applications should be used—ointments by night and lotions in the daytime. Sulphur was the best in both kinds of application as a rule. When there was much inflammation around the acne lesions soothing treatment, such as zinc &c., was necessary, and belladonna locally applied was sometimes of service. When the most active disease was remedied the preventive treatment came into play, and it must be impressed on patients that unless they are willing to take the trouble to carry it out in a thorough and consistent manner they cannot expect to be free from acne.

Dr. ABRAHAM complimented Dr. Mackenzie on his extremely able and exhaustive paper. He agreed with him that external treatment was of primary importance. He used largely a lather of ichthyol soap kept applied as long as possible after bathing with hot water. He could speak in the highest terms of Dr. Walter Smith's method of treating acne pustules. The worst cases could be cured in a comparatively short time by the local application of pure carbolic acid or other similar germicidal substance.

Dr. JOHN BROOM (Bristol) agreed generally with Dr. Mackenzie's views as to local treatment as to soaps, ointments, and lotions, but differed somewhat from him as to constitutional treatment. In his own practice during the last ten years he had generally found some dyscrasia from imperfect digestion—e.g., errors in mastication and insalivation of food in the mouth or later in the stomach or bowels, errors in times of taking food, and also in kinds of food, excess of beef and pork &c. All these several errors he first ascertained and corrected, and then treated by prescribing suitable diet, local and constitutional treatment, impressing upon the patient the necessity of attention and perseverance in details of treatment till cured—usually over a few months. He generally prescribed internally alteratives, saline aperients, and sedatives, and later suitable tonics; and externally detergent or stimulating soaps, emollient and healing ointments at night, and soothing, astringent, and healing lotions by day, washing before each application. When the acne was pustular he opened with the knife as required.

Dr. UNNA observed that he was the introducer of soaps in diseases of the skin. He recommended zinc paste containing salicylic acid, resorcin, sulphur, &c.

Mr. MALCOLM MORRIS considered that constitutional treatment was of importance.

Dr. CROCKER also did not rely only on local treatment.

Dr. PAYNE considered acne a disease not of sebaceous glands, but of rudimentary hairs. As regarded treatment, he considered himself far more a "localist" than a "constitutionalist," but he still thought that the question of diet, beer, &c. was most important.

Dr. G. G. STOPFORD TAYLOR had discarded soaps in acne for the linimentum saponis, which had the advantage of not adding grease to the greasy skin and formed an excellent medium for other drugs. He also gave the unguentum hydrargyri ammoniati at night. He had found that constipation was an important factor.

Dr. UNNA demonstrated a newly discovered micro-organism found in acne, but never seen in other forms of folliculitis. It was a very small bacillus occurring in masses and occupying cavities in the comedo. Dr. Hodara had succeeded in cultivating it. Dr. Unna had changed his view as to the importance of the staphylococcus in acne, this newly discovered bacillus being, in his belief, the only cause.

The proceedings of the Section, which had been of considerable interest, then terminated.

THE EXHIBITS AT THE TWENTY-SEVENTH ANNUAL MUSEUM.

(Continued from page 299.)

Messrs. Parke, Davis, and Co. of Detroit and London have on their stall an apparatus for showing the means of testing the digestive activity of pepsin. The special drugs shown are the fluid cascara aromatic, Weld's syrup of iron and liquor sedans, and a preparation of pepsin called "aseptic pepsin" is exhibited. A new preparation of coca leaf is being shown called "eszencia de coca," the main features of which are that it is made from the new leaf and is combined with a liquor. This firm also show a pocket reagent case for urine analysis, complete with all the new tests, and an aluminium hypodermic case containing a syringe with patent expanding plungers is on view, and their "normal liquids," standardised fluid extracts of vegetable drugs, are shown in a form which may be diluted to the British Pharmacopœia standard.

Messrs. Allen and Hanburys (Limited) have a large display of sterilisers and sterilised apparatus for use in operating theatres, and an extensive show of aseptic surgical instruments, including the midwifery forceps of Dr. Godson with a removable handle. Their exhibit of pharmaceutical preparations is a large one and includes bynin, bynol and the byno-hypophosphites. Dr. Tucker Wise's chest measurer is among the exhibits.

Messrs. F. Comar and Sons of London exhibit in various parts of the building their vin Nourry or Nourry iodinated wine, and it arrested the attention of many of the members of the medical profession. The vin Nourry has been described in THE LANCET as a means of presenting iodine in a form that is devoid of metallic taste, permanent in character, and not giving rise to disagreeable effects. It has been employed in many of the large hospitals in England and Scotland as a substitute for cod liver oil.

Messrs. Arthur and Co. of London exhibit their antiseptic handkerchiefs and many of their new medicinal preparations.

Messrs. Corbyn, Stacey, and Co. of London have a good display of liquid extracts, saccharole preparations, thyroid preparations, and other therapeutic materials.

Messrs. A. Hurst and Co. of London have an electro-medical exhibit, amongst which several novelties are found, among them being a laryngoscope fitted with electric light, to which is attached a tongue depressor. This firm have also arranged accumulators in such a way as to produce the effect of the faradic coils. They have a great variety of physiological coils and a new large battery for electrolysis and the Apostoli treatment.

Messrs. Warrick Bros. of London present for the first time a new mode of administering sulphate of iron and carbonate of iron, which is an improvement upon their capsules. In the capsules the carbonate of iron has to be mixed with

oil, but in this preparation the carbonate is mixed with sugar as in the saccharated carbonate. The sugar acts as a preventive of oxidation, and this is still further obviated by the close admixture of the jujube mass. In this way the preparation is palatable and can easily be swallowed.

The Corporation of Harrogate have an exhibition of the waters from that district. The Bath waters, the Flitwick Chalybeate Company, the Idris Table Waters, and the Chemists' Aerated Water Company are also represented. Apparatus for baths are shown by Messrs. Shanks and Co., and by Messrs. Scull of Bristol.

The filters exhibited are the Nibestos and the Whitman. Several hygienic bedsteads of various patterns are exhibited by the Longford Wire Company and Messrs. Billington Bros. of Liverpool. The Gem Disinfector is shown in working order by Messrs. Bishop and Son of Bristol. Various other exhibits deserve notice, notably cascara jelly, by Messrs. Harper, Stagg, and Morgan, the Canadian Club whisky, an interesting exhibit in the Thermogen heat producer, lately noticed in the columns of THE LANCET, and the new drug "lungili."

Messrs. Armour and Co. of London show their pharmaceutical animal products, thyroidin, pepsin, pancreatin, and various forms of extracts of beef. Messrs. Godfrey and Cooke of London exhibit their chloride of ammonium inhalers, medicated liquid soaps, and a new lactagogue, the Palma Christa.

Messrs. Coxeter and Sons of London show Edmunds' ophthalmoscope, in which the lenses read consecutively, and to which is attached a pupilometer. This firm also exhibit a number of dry cells and a rheostat for charging accumulators from the main.

Messrs. Boyd and Co. of Belfast show specimens of their doctor's ulster coat made from the Ballylareen dupple frieze and manufactured by them at their mills near Belfast. Messrs. Boyd and Co.'s eiderdon rug in a large variety of handsome colourings is also shown, with a novelty in a "one man" rug. The Jackson-Harmsworth Polar Expedition hunting coat attracted considerable attention, shaped like a large sack, made of the thickest eiderdon, with wide sleeves, pockets for cartridges, &c., and game pockets constructed of their waterproof material, through which no coloured matter could penetrate. Messrs. T. Howard Lloyd and Co. of Leicester exhibit among their usual preparations some portable dressings for hæmorrhoids, medicated pessaries, suppositories, and bougies. They are also showing Unna cloth invented by Dr. Unna of Hamburg.

Messrs. Krohne and Sesemann of London exhibit a phlebograph devised by Dr. J. Mackenzie for taking tracings of the venous pulse, and a clinical polygraph, also suggested by Dr. J. Mackenzie, for taking at the same time and on the same recording surface tracings of the radial pulse with tracings of the apex beat, carotid, venous or liver pulse, or the respiratory movements, for ready employment in general practice; a cephalograph invented by Professor Oliver of Newcastle-upon-Tyne for taking pulsation of the brain; maxillary antrum tubes by Dr. Milligan; operating speculum, mastoid probe, furuncle and paracentesis knife, and soft rubber tubes for lateral irrigation of nasal cavities, by Dr. Grant; new perineal evacuating cannula, new prostatic bougies for keeping open incised stricture, and lithoclast for large stones by Mr. Reginald Harrison; caisson tubes, forceps, gouges, and knives for removing growths from the bladder by Mr. Hurry Fenwick; a handy anæsthetiser for administering chloroform &c. in precise dilution by one hand, which, it is claimed, gives the administrator perfect control over the anæsthetic and ensures to the patient automatically his due supply of air; also their well-known respiration indicator, which, by its rise and fall, enables the administrator to observe and accurately estimate the condition of the breathing at every stage during the administration; various improvements in gynæcological and general operating instruments; and a pair of bellows for the employment of artificial respiration designed by Sir Benjamin W. Richardson.

Messrs. Salmon, Ody, and Co. of London exhibit trusses, belts, and surgical instruments of all kinds, a special feature being trusses made of aluminium, saving one-third of the weight, but affording the same strength and durability as the ordinary metal, and at the same time being not liable to oxidation. Their self-adjusting truss covered with celluloid, which can be used for hot climates, is shown.

Messrs. Richardson and Co. of Leicester have a large display showing their prize dispensing cabinet, flexible capsules in great variety, compressed tablets, and effervescent preparations. They exhibit also surgical instruments of the latest style and make.

Messrs. Weiss and Son are exhibiting a variety of novel and useful instruments and appliances, including a masticator and a guillotine suggested by Mr. Stanley Boyd. Aseptic instruments in large variety are also shown.

At the Queen's-road entrance there is displayed a very interesting portable operating-table, designed by Mr. Jordan Lloyd of Birmingham. It is of hard wood, of the ordinary operating-table size—6 ft. long, 20 in. broad, and 30 in. high, strong enough to carry the heaviest patient. It is arranged so as to fold up into a space 3 ft. long, 20 in. broad, and 6 in. high and is capable of being carried by hand or in an ordinary vehicle. It is fitted with flaps, which may be lowered for operating in the lithotomy position. The table has stood the test of regular work for some years.

Messrs. A. and J. Warren of Bristol exhibit Stoddart's sea-salt, the ready solubility of which they consider a great convenience to the user. They show various medical soaps, and a hospital antiseptic soap containing a percentage of red iodide of mercury. The essence of rennet for cheese manufacture is also a portion of their exhibit. They likewise show otto of rose, oil of bergamot, and other toilet requisites, as well as the products manufactured by Messrs. F. Bayer and Co.—sulphonal, phenacetin, salophen and europhen, and chemicals used in analytical researches.

The Angier Chemical Co. of London show their emulsion of earth or rock oil with the hyposulphates of lime and soda, which has been already reported on in THE LANCET. It combines the idea of using a pure hydrocarbon as a vehicle for the administration of pure hypophosphites with the antiseptic properties of the oil. It is quite palatable and does not offend delicate stomachs. It forms another substitute for cod-liver oil.

Mr. J. Rogerson of London exhibits an improvement in under-vests for winter wear. It provides for an extra supply of warmth over the dorsal and lumbar regions. The front of the vest is made of a single weaving or stitch, while the back is woven in a ribbed style, without, however, doubling the material. This saves any increase in the weight.

Messrs. Alfred Carter, Limited, of London exhibit some excellent invalid furniture, including many varieties of couches and reading apparatus. Their antiseptic tables and modern ambulance appliances form an interesting exhibition.

Messrs. Abbott and Sons of London have a small, but neatly arranged, display of diabetic foods.

Mr. Henri Nestlé of London shows his two products—Nestlé's Food for Infants and Invalids, and Nestlé's Swiss Milk—well known both to the medical profession and to the public.

LATEST INTELLIGENCE CONCERNING THE CHOLERA CASES FROM THE *BALMORE*.

FROM inquiries made at Denton by our representative it appears that the infected vessel had taken in a supply of water at Dunstan, Gateshead, for drinking purposes. On the arrival of the vessel at Cronstadt the empty tanks were filled directly from the river Neva which has since been used only for cooking and washing purposes, the remains of the English water having been stored in two casks and used exclusively for drinking. Communication took place freely between the shore and the vessel, but only the captain and the steward went on shore to obtain provisions. The captain imagines that the deceased man might have drunk some of the Neva water. There was no evidence to show contamination of the vegetables and the other provisions, but the cooking utensils were cleansed with Neva water. Dr. Wrightson, the medical officer of health for Aldeburgh, where the ship called, communicated with Dr. Collingridge. When the vessel arrived the man had been dead six hours. On inspecting the crew, Dr. Williams, one of Dr. Collingridge's assistants, found four men suffering from suspicious diarrhœa. The ship was ordered to moor opposite the Denton Hospital. The four men were removed to the hospital for observation and treatment. There the diarrhœa increased, and the examination of the stools in one more pronounced case gave "positive evidence of cholera" (Professor Klein.) On Wednesday another member of the

crew was sent into the hospital. Thus in all one death and five cases have arisen on board the *Balmore*. Dr. Williams made a necropsy seventeen hours after death, and found the small intestines empty and the large intestines distended with gas. On opening up the intestine the contents were found to be of a gelatinous, pea-soup colour, perfectly devoid of bile. When put under water large portions of the mucous membrane readily floated off, and in places there was slight hæmorrhage into the mucous membrane. The kidneys were congested and soft, and the blood thickened and of a dark colour. Dr. Klein's bacteriological report states that the portion of the intestine and contents which he examined gave "positive evidence of cholera." The vessel has been visited by Dr. Collingridge, and the ship has been thoroughly disinfected under his immediate supervision. Dr. Collingridge has allowed the vessel to proceed after a final visit and personal inspection of the vessel and each person on board.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen, having passed the necessary examinations, have been admitted Diplomates in Public Health :—

Banks, Alfred, F.R.C.S. Eng., L.R.C.P. Lond., St. Thomas's and University College Hospitals.
Barbeau, Louis Gabriel, M.B. Edin., Edinburgh University and College of State Medicine.
Cooper, Dassabhoy Nowrojee, M.R.C.S. Eng., L.R.C.P. Lond., Madras University and St. Bartholmew's and University College Hospitals.
Dow, William Alexander, M.B. and B.S. Durh., M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's Hospital.
Footner, John Bulkley, F.R.C.S. Eng., L.R.C.P. Lond., King's College Hospital.
Smith, Samuel Shore, M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's Hospital.
Snell, Sidney Herbert, M.D. Lond., M.R.C.S. Eng., L.R.C.P. Lond., University College Hospital.
Stonham, Henry Archibald, M.R.C.S. Eng., L.R.C.P. Lond., Westminster and London Hospitals.
Symes, John Odery, M.R.C.S. Eng., L.R.C.P. Lond., M.B. Lond., St. Mary's Hospital.
Tatham, Charles John Willmer (Surgeon-Captain, Army), M.R.C.S. Eng., L.S.A., King's College Hospital.
Watson, George Alexander, M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., University College Hospital.
White, Thomas Edward, L.R.C.P. and S. Irel., Carmichael School of Medicine, Dublin.
Williamson, John, M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., St. Bartholomew's Hospital.

Ten candidates were referred.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bonn :* Dr. Doutrelepont has been promoted to an Honorary Ordinary Professorship of Dermatology and Syphilography. Dr. A. Schmidt has been recognised as *privat-docent* in Medicine.—*Berlin :* Drs. A. Westphal and R. Greef have been recognised as *privat-docenten* of Neurology with Psychiatry and Ophthalmology respectively.—*Bordeaux :* Dr. Nabias, *agrégé*, has been appointed Professor of Materia Medica.—*Geneva :* Dr. E. Guder has been recognised as *privat-docent* in Laryngology and Rhinology.—*Kieff :* Dr. K. M. Lepliuski has been recognised as *privat-docent* in Neurology and Psychiatry.—*Montpellier :* Dr. Hedéon has been appointed to the chair of Physiology.—*Nancy :* Dr. Meyer has been appointed to the chair of Physiology, Dr. Simon to the chair of General and Internal Pathology, and Dr. Prenant to the chair of Histology.—*Naples :* Drs. Tria and Vitone have been recognised as *privat-docenten* in Pathology and Materia Medica with Therapeutics respectively.—*Paris :* Dr. Filhol has been appointed Professor of Comparative Anatomy at the Museum of Natural History in succession to the late M. Pouchet.—*Tomsk :* Dr. Stanilaus Zaleski is about to resign the Professorship of Chemistry.

THE GRIFFITHS DEFENCE FUND.—On Monday, July 30th, a well-attended meeting was held of the subscribers to the Griffiths Defence Fund at the Albert Minor Hall, Swansea. Mr. M. B. Williams, High Sheriff of Glamorganshire, presided. Lord Swansea presented Dr. Griffiths with a cheque for £500 and an illuminated address expressive of sympathy with him and his family in their recent trouble, and of congratulation at the brilliant manner in which he had vindicated his character and professional integrity against the unfounded charges which had been preferred against him. Sir John Williams, as the spokesman of the medical subscribers, also addressed the meeting, concluding his remarks by observing that members of the medical profession had especially to thank Dr. Griffiths for the stand he had made, for that in fighting his own cause he had fought that of his profession at large, as that had he not insisted on bringing this case publicly to a successful issue similar false charges against medical men would have been even more frequent in the future than they are at present. Dr. Griffiths suitably responded, and the meeting terminated with the customary votes of thanks. The address was signed on behalf of the 218 subscribers by the following :—W. Pike (Mayor of Swansea), Morgan B. Williams (High Sheriff), Lord Dynevor, Lord Swansea, Sir John T. D. Llewelyn, Bart., Sir William Jenner, Bart., Sir John Williams, Bart., Miss E. A. Dillwyn, John Cope Fowler (stipendiary magistrate), and E. Le Crônier Lancaster, M.B. Oxon., and W. F. Brook, F.R.C.S. Eng. (Hon. Secs. to the Medical Fund).

THE ATTACK ON DR. JOSEPH WIGLESWORTH.—Our Liverpool Correspondent telegraphs just as we are going to press that the stab inflicted upon Dr. Joseph Wiglesworth wounded the left internal carotid artery just at its entrance into the skull. Mr. Damer Harrisson, assisted by Mr. Rushton Parker, tied the common carotid artery on Wednesday, and the present condition is favourable.

Parliamentary Intelligence.

HOUSE OF LORDS.

FRIDAY, AUG. 3RD.

The Opium Commission.

IN reply to a request from Lord Balfour, Lord Brassey, chairman of the Opium Commission, said the Commission hoped to be able to present their report before the close of the year—probably in November.

HOUSE OF COMMONS.

THURSDAY, AUG. 2ND.

The Alleged Increase of Insanity.

Mr. Kenny referred to the report of the Lunacy Commissioners on this subject and wished to know whether, considering the difference of opinion as to the cause of the alleged increase in this and other countries, the Home Secretary would enter into negotiations with foreign Governments in order that an International Commission might be appointed to inquire into the subject.—Mr. Asquith pointed out that there was no material disproportionate increase of insanity in England and Wales, but the matter was one of great importance, and he would give consideration to the subject in the direction suggested by the hon. member.

FRIDAY, AUG. 3RD.

Aldershot Sewage.

Mr. Pierpoint drew the attention of Mr. Campbell-Bannerman to the report of the medical officer of health to the Surrey County Council on the Aldershot Camp Sewage Farm, which was in reality a sewage marsh, and which would be productive of great danger in case of invasion by cholera.—The Secretary for War stated that the removal of the farm was under consideration.

THURSDAY, AUG. 9TH.

The Inquiry into Workhouse Schools.

Several questions on this subject were addressed to the President of the Local Government Board, and in the course of his replies Mr. Shaw Lefevre said that the Government were of opinion that the inquiry would be best conducted by a committee of five or seven persons nominated by the Government. The inquiry would be directed to the case of London, where the large workhouse schools chiefly existed, and where there was very great difficulty at the present time in providing for the increasing number of children. The right hon. gentleman undertook to consider whether a lady should be appointed to the committee.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BERESFORD, R. DE LA POER, M.D. Glasg., L.R.C.P. Lond., L.R.C.P. L.R.C.S. Edin., has been reappointed Medical Officer of Health for the Oswestry Rural and Urban Sanitary Districts.

BUTCHER, THOS. N., M.B., C.M. Edin., has been appointed Surgeon (for twelve months) to the Blackpool Hospital.

DEANS, WILLIAM, M.B., C.M. Aberd., has been reappointed Medical Officer of Health for the Ramsbottom Urban Sanitary District.

DONALDSON, J. C., M.D., M.Ch., B.A.O. Irel., has been appointed Medical Officer for the Cranford Sanitary District of the Staines Union.

EALAND, HUGH F., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Braughing Sanitary District of the Bishop Stortford Union, and also Medical Officer for the First Sanitary District of the Ware Union.

EDWARDES-KER, G. C., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Woodbridge Urban Sanitary District.

GOODFELLOW, J. A., M.B., C.M. Glasg., has been reappointed Medical Officer of Health for Brampton.

HESLOP, F. A., L.R.C.P. Edin., L.R.C.S. Edin., has been appointed Surgeon (for twelve months) to the Blackpool Hospital.

HILL, G. WILLIAM, has been appointed Surgeon-in-Charge of Aural Out-patients at St. Mary's Hospital, London, W.

HODGSON, V. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Assistant to the Medical Officer of Health for the Port of London.

HOLT, H. M., M.R.C.S., has been reappointed Medical Officer of Health for the Malton Urban Sanitary District.

HOME, GEORGE, M.B., C.M. Edin., has been appointed Assistant House Surgeon to the Northern Hospital, Liverpool.

HUTCHINSON, S. J., has been appointed Consulting Dental Surgeon to the University College Hospital, in succession to the late Mr. Ibbetson.

KINGSBURY, GEORGE C., M.D., B.Ch., has been appointed Consulting Physician (for twelve months) to the Blackpool Hospital.

MOLLOY, L. G. S., M.D. Dub., has been appointed Surgeon (for twelve months) to the Blackpool Hospital.

MURRELL, C. F. F., M.B., M.S. Aberd., M.R.C.S., has been appointed Medical Officer of Health for Acton, vice Gardner resigned.

MUSSEN, A. A., B.A., M.B., B.Ch. Dub., has been appointed House Physician to the Northern Hospital, Liverpool.

NICOLL, J. M., M.B., C.M. Edin., has been appointed Medical Officer of Health for the Borough of Jarrow, and Medical Superintendent to the Borough Hospital.

PARRY, L. V., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed House Surgeon to the Flintshire Dispensary.

PARSON, WM., M.R.C.S., has been reappointed Medical Officer for the Godalming Sanitary District of the Guildford Union.

RICHARDSON, W. R., M.R.C.S. Eng., has been appointed Surgeon (for twelve months) to the Blackpool Hospital.

ROBERTSON, D. W., L.R.C.P., L.M., M.R.C.S., has been reappointed Medical Officer of Health for the Pickering Sanitary District of the Pickering Union.

RUXTON, JOHN, M.D., C.M. Aberd., has been appointed Consulting Surgeon (for twelve months) to the Blackpool Hospital.

SIMPSON, J. POLLOCK, M.D. Glasg., has been appointed Medical Officer to the Metropolitan Fire Brigade, No. 9 District, by the London County Council.

SMITH, H. L., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer for the Eighth Sanitary District of the Newmarket Union.

SMITH, HUGH R., M.D. Lond., M.R.C.S., L.R.C.P. Eng., has been appointed Resident Medical Officer to the University College Hospital, London.

SMITH, K. R., M.D. Lond., M.R.C.S., has been reappointed Honorary Medical Officer to the Totnes Cottage Hospital.

SOPER, R. W., M.R.C.S., has been reappointed Medical Officer of Health for the Dartmouth Borough and Port.

STOREY, J. A., L.R.C.P. Edin., L.R.C.S. Irel., has been appointed Medical Officer of Health to the Dunstable Town Council.

TAYLOR, ARTHUR S., B.A., B.C., M.D. Cantab., F.R.C.S. Eng., has been appointed Honorary Medical Officer to the Surbiton Cottage Hospital.

THOMPSON, R. E., M.D. Cantab., F.R.C.P. Lond., has been appointed Consulting Physician to the Consumption Hospital, Brompton.

TOBIN, J. J., M.D., M.Ch. Irel., has been appointed Medical Officer of Health, Ilkeston.

WILLETT, G. G. D., M.R.C.S., has been reappointed Medical Officer for the Sanitary Districts of Bitton and Marksbury of the Keynsham Union.

WILLIAMS, C. F., M.D. Lond., F.R.C.P., has been appointed Consulting Physician to the Hospital for Consumption, Brompton.

YOUNG, MEREDITH, M.B., C.M. Edin., has been appointed Medical Officer of Health for the Brighton Urban Sanitary District.

ERRATUM.—In our issue of the 14th ult. it was announced by error that H. W. Vaughan-Williams, M.B., C.M. Edin., had been appointed Medical Officer for the Gosforth Sanitary District of the Whitehaven Union; the name should have been H. W. Vaughan.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN CITY HOSPITAL.—Resident Physician at the City (Infectious Diseases) Hospital. Salary £50 per annum, with board and lodgings at the Hospital. Applications to the Town Clerk, Town House, Aberdeen.

CHELSEA, BELGRAVE, AND BROMPTON DISPENSARY, 41, Sloane-square, S.W.—Honorary Physician.

CUMBERLAND INFIRMARY, Carlisle.—House Surgeon for one year. Salary £70 per annum, with board, lodging, and washing.

DURHAM UNION WORKHOUSE.—Medical Officer for the Durham Union Workhouse. Salary £50 per annum, with certain extra medical fees. Applications to the Clerk to the Guardians, Durham.

EVANGELICAL PROTESTANT DEACONESSES' INSTITUTION AND HOSPITAL, Tottenham, N. — Junior House Surgeon. Salary £40, with board, &c.

GENERAL HOSPITAL, BIRMINGHAM.—Assistant Surgeon for three years. Honorarium of £100 per annum.

GENERAL HOSPITAL, Nottingham.—Senior Resident Medical Officer for two years, but eligible for re-election. Salary £120 for the first year, with an addition of £10 a year up to £150, with board, residence, and washing.

HANTS COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £100 per annum, increasing up to £125 after twelve months' service, with furnished apartments, board, washing, and attendance. Applications to the Committee of Visitors, Knowle, Fareham.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant Resident Medical Officer for six months. Board, washing, and residence in the hospital provided, and an honorarium of five guineas on satisfactory completion of the term of appointment.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon. Salary £100 for the first year, with an increase of £10 the second year, and board and residence.

PARISH OF LOCHGOILHEAD AND KILMORICH.—Medical Officer to attend the poor of the parish. Salary £60 per annum. In addition, a supplement of £40 per annum, exclusive of practice, will be guaranteed by the residenters to a suitable man. Applications to the Chairman of the Parochial Board, Invermay, Douglas Pier, Lochgoil, not later than Aug. 24th.

RUBERY HILL ASYLUM, Broomsgrove, Worcester.—Clinical Assistant.

ST. LUKE'S HOSPITAL, London, E.C.—Clinical Assistant for six months. Board and residence provided.

ST. PETER'S HOSPITAL, Henrietta-street, Covent-garden, W.C.—House Surgeon for six months. Salary at the rate of fifty guineas a year, with board, lodging, and washing, and an allowance for wine &c.

TEIGNMOUTH INFIRMARY, Devon.—Locum Tenens as House Surgeon for three weeks in September. Board, rooms, washing, and travelling expenses provided. Apply to Dr. Forrest, Teignmouth Infirmary, Devon.

Births, Marriages, and Deaths.

BIRTHS.

BERRY.—On Aug. 3rd, at Grantham, the wife of H. Poole Berry, M.B., of a daughter.

CHILD.—On Aug. 6th, at College-park, W., the wife of Warwick L. Child, M.D., of a daughter.

DIGBY.—On Aug. 6th, at Ticehurst, Sussex, the wife of Cecil Arthur Digby, M.D., of a son.

DOVE.—On Aug. 5th, at Carshalton, Stapleton Hall-road, Stroud-green, the wife of Percy W. Dove, M.R.C.S., L.R.C.P., of a daughter.

GRACE.—On July 31st, at Thornbury, Gloucestershire, the wife of Edward Mills Grace, L.R.C.P. Edin., M.R.C.S., coroner, of a son.

MORTON.—On Aug. 1st, at Walthamstow, Essex, the wife of Charles James Morton, M.D., of a daughter.

MARRIAGES.

BLOMFIELD—COLBECK.—On Aug. 1st, at Fryston Church, Ferrybridge, George Wills Blomfield, M.R.C.S., L.R.C.P., L.S.A., of Pontefract, to Charlotte Elizabeth, daughter of Edwin Colbeck, of Maromme, Rouen, France.

HUTCHESON—TAMPLIN.—On Aug. 2nd, at St. Bartholomew's Church, Brighton, Thomas Brown Hutcheson, M.B., to Lilla Evelyn, second daughter of the late Col. Tamplin, Lennox-place, Brighton.

KENNISH—DICKSON.—On Aug. 7th, at St. Peter's Episcopal Church, Edinburgh, Thomas L. Kennish, M.D. Edin., of Winslow, Bucks, to Jeanie Johnstone Frazer, only surviving daughter of the late W. E. G. C. Dickson, M.D. Edin.

SLADER—HARVAY.—On July 24th, at the Parish Church, Bromley, Kent, by the Rev. James White, M.A., Chaplain of Bromley College, and the Rev. A. G. Hellicar, M.A., Vicar of Bromley, George W. Burgess Slader, L.R.C.S. and L.M. Irel., L.S.A. Lond., of Gainsborough, Lincolnshire, only son of the late Captain Slader, H.E.I.C.S., of Pendilo, Amroth, Pembrokeshire, to Lucy Florence Mary, eldest daughter of Charles Harvay, of Ironhurst, Bromley, Kent.

WARDE—GOLDIE.—On July 31st, at St. John's Church, Tunbridge Wells, Wilfrid Brougham Warde, M.R.C.S. Eng., L.R.C.P. Lond., of Knowsley-street, near Liverpool, to Louise Sophie Marie (Lulu) Goldie, only daughter of Lewis Goldie, of 22, Victoria-road, Clapham-common.

DEATHS.

HANSELL.—On July 11th, at Riversdale, Cape Colony, William Charles Hansell, M.R.C.S., in his 44th year.

SLATER.—On Aug. 3rd, at his residence, 65, Thornhill-square, Barnsbury, N., John T. Slater, M.D., in his 54th year.

TURNOUR.—On Aug. 7th, at Denbigh, suddenly, Arthur Edward Turnour, M.D., of Denbigh, aged 75 years.

TWEDDELL.—On Aug. 4th, at Scarborough, suddenly, George Tweddell M.R.C.S., L.S.A., in the 30th year of his age.

WARD.—On Aug. 1st, at Southsea, John Ward, R.N., Deputy-Inspector-General of Hospitals and Fleets (Retired List), aged 73 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Aug. 9th, 1894.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb	Solar Radia in Vacuo.	Maximum Temp Shade.	Min. Temp	Rainfall.	Remarks at 8.30 a.m.
Aug. 3	29·67	W.	61	56	120	71	55	·04	Cloudy
,, 4	29·77	N.W.	62	58	116	72	56	...	Cloudy
,, 5	29·81	S.W.	63	57	114	72	56	·01	Cloudy
,, 6	29·75	N.W.	60	59	89	70	59	·13	Overcast
,, 7	29·86	N.W.	63	60	121	75	59	...	Hazy
,, 8	29·79	W.	65	60	99	70	60	·01	Cloudy
,, 9	29·75	W.	62	58	108	69	55	·03	Cloudy

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

PUBLISHER'S NOTICE.

IN order to facilitate the work of reference to the volumes of THE LANCET, we have arranged to publish duplicate copies of the Index to each half-yearly volume in a form in which they may be subsequently filed or bound together. Those of our subscribers who may wish to be supplied with loose copies can obtain the same (without extra charge) on making application to the Publisher of THE LANCET.

ENTERIC FEVER IN INFANTS.

DR. WILLIAM B. NOYES of New York, writing in the *New York Medical Record* of July 7th, in an account of the recent milk epidemic of typhoid fever in Montclair, N.J., says that of 117 cases seven were reported under three years of age. He refers to the youngest recorded case as one reported in THE LANCET by Dr. Ogle at four months and a half. A necropsy showed swollen Peyer's patches with ulcers, partly ulcerated solitary follicles, enlarged mesenteric glands, and enlarged and softened spleen. He gives in great detail the fatal case of a child eleven months old with all the symptoms and signs, including rose spots. The diagnosis was confirmed by two other cases in the same house. Such cases, though rare, do certainly occur. Swelling in Peyer's patches does not proceed so often to ulceration as in the adult. Henoch found ulcers in thirteen out of twenty-three necropsies of his 239 cases in children, and the milder lesions seem to cause milder abdominal symptoms.

HYDROPHOBIA TREATED BY A GROCER.

IN this wonderfully free country scarcely any liberty with the sick body surprises us; but it is difficult to read with serenity the story of a child two years old bitten by a dog being taken, after cauterisation by a medical man, to a distance to be treated by a grocer according to his system for hydrophobia. The grocer's "system" is, of course, only known to himself, but it begins with a preliminary starvation of twelve hours—in this case of seventeen hours. In about a month symptoms of hydrophobia developed, and proved quickly fatal in spite of further medical advice. The jury found that the child died from exhaustion following hydrophobia, but added that no one was to blame. We should have thought that a grocer ordering the starvation of a child for twelve hours, to say nothing of his treatment, was decidedly "to blame." If anything would tend to lower the vitality of a child two years old and make it an easier prey to the virus of rabies it would be such an ordeal as this. We think the jury should have expressed censure of the grocer.

Mr. W. Mawer, F.G.S., sends us the following particulars of a curious incident which has just happened in the case of a small fox terrier:—On July 22nd a swelling was first observed in about the situation of the dog's fifth rib and two inches from the spinal processes of the vertebræ. The dog "went off its appetite" and was evidently ill. On the morning of July 31st a piece of wood was seen to be protruding from a sore in the same situation, and this the dog laid hold of with its teeth and extracted, drawing out a butcher's skewer 4¾ in. in length. When our correspondent saw the dog there was a sinus, from which a little blood still oozed. Much pus had previously escaped. The skewer was probably one upon which the cat's-meat man had supplied the dog's food.

F.R.C.S.E.—The question is legal and moral rather than medical in character; but we see no reason why a man of full age should not give such an undertaking. It is a mere form of contract, not requiring medical qualification. It would certainly be morally binding.

ADVERTISING ABORTIONISTS.

To the Editors of THE LANCET.

SIRS,—In Queensland an Act of Parliament has been in force for some years which has had the effect of putting an end to the advertisements of abortionists and other indecent quacks. This is as it should be, and I quite understood that a similar Act—The Immoral Advertisements Act—was in force in Great Britain. Recently, however, I have been surprised to notice the advertisements of advertising abortionists in several papers published in London, and I think it is for the public good that an end should be *at once* put to the practice. One of these papers, of date April 7th, 1894, which is the last that has come under my notice, contains six abortionists' advertisements, and one from a person evidently selling instruments for preventing conception. Living so far away, I can only draw your attention to this matter, in the hope that you will be able to use your great influence in an effort to put an end to practices alike immoral and unlawful.

I remain, Sirs, yours very faithfully,

HUNTER FINLAY, M.D.

Townsville, Queensland, June 12th, 1894. (Clerk in Holy Orders).

AVERAGE WEIGHTS OF CHILDREN.

Mr. Edwin B. Vizer.—The following averages were obtained by Quetelet:—

Age.	Male.	Female.	Age.	Male.	Female.
1	19·8 lb.	18·9 lb.	9	51·7 lb.	46·2 lb.
2	24·2 ,,	24·2 ,,	10	55·4 ,,	50·8 ,,
3	27·5 ,,	27·2 ,,	11	59·4 ,,	56·1 ,,
4	30·8 ,,	30·5 ,,	12	63·8 ,,	63·8 ,,
5	34·9 ,,	33·6 ,,	13	72·8 ,,	71·5 ,,
6	39·1 ,,	36·7 ,,	14	81·6 ,,	79·8 ,,
7	43·3 ,,	39·1 ,,	15	90·6 ,,	88·0 ,,
8	47·5 ,,	41·8 ,,			

Dr. Bridge has drawn up the following table of average weights of English children in non-factory districts:—

Age.	Male.	Female.	Age.	Male.	Female.
8	55·08 lb.	52·82 lb.	11	71·01 lb.	68·00 lb.
9	60·02 ,,	56·53 ,,	12	75·00 ,,	75·95 ,,
10	65·29 ,,	61·19 ,,			

H.—The facts are not fully given—namely, the nature of the case in dispute and the relation of F. to it, the exact time which elapsed between H.'s being seen driving out and the attack of phlebitis, and between this attack and the time at which he was subpœnaed; but it requires strong justification for one practitioner to make an affidavit contradicting the affidavit of another practitioner in actual attendance.

SINGERS' NODULES.

THE *New York Medical Record* reports that at the recent meeting of the American Laryngological Association Dr. F. I. Knight of Boston spoke of the little nodule, the size of a millet seed or larger, appearing on one or both vocal cords at about the junction of the middle and anterior third after strain of the voice by prolonged use or wrong vocal methods. He considered it to be pathologically of the same nature as the nodules occurring in the diffuse form termed "trachoma.', So far as he had observed, rest, and if there was inflammation of the surrounding mucous membrane, had been sufficient to restore the voice. It is astonishing what rest and soothing and restoring methods apart from surgical procedures will do for such exudations.

S. L. H. writes:—"A patient of mine aged thirty presents a peculiar and what I take to be an unusual condition. I shall therefore be glad to have the opinion of some of your readers as to its cause and treatment. The urine as passed morning and evening is always of an acid reaction and apparently normal, whilst that voided about midday is invariably alkaline and deposits large quantities of phosphates. I believe the condition to have existed for some years. The patient tells me that during office hours (9 A.M. to 4 P.M.) he is always 'working against time,' but that this same condition of alkaline, phosphatic urine voided in the middle of the day remains unchanged during holiday times."

M.D.—Cocaine is unquestionably the most effectual local anæsthetic, but there are no known precautions or safeguards which can render its use free from risk. No recent researches have been undertaken to explain its action &c. There is a summary of what is known about its action and the best methods of using it in Dudley Buxton's Anæsthetics, second edition (Lewis, London); also an article more on the therapeutic side in Ringer's Therapeutics (Lewis, London).

A TELLURIC CAUSE FOR INFLUENZA.

To the Editors of THE LANCET.

SIRS,—In turning over a curious old pamphlet that I picked up in Edinburgh, entitled "Letter addressed to Sir John Sinclair, Bart., on the Mode of Living, Manners, and Customs in Edinboro' in 1763" (published in Edinburgh in 1793), I found the following (p. 46):—

"In 1783 there was an immense volcanic eruption in the island of Iceland, which began on the 10th of June and continued until the middle of August. A new island was thrown up in the neighbouring sea and again disappeared. Several months previous to this eruption a heavy, dark-bluish, sulphurous fog had been observed to rest over the island when not dissipated by the wind. This fog at times was spread all over Europe. The year before this eruption, and a few months before the earthquake in Calabria, a contagious disease called the influenza spread through Europe."

Thinking that the above may interest some of your readers,

I remain, Sirs, yours truly,

Aug. 7th, 1894. CUTHBERT JOHNSON.

"A NEW TROCAR AND CANNULA FOR EMPYEMA."

To the Editors of THE LANCET.

SIRS,—Messrs. Mayer and Meltzer have sent me their grooved trocar and cannula, and I find it similar to the one described by me in THE LANCET of the 14th inst.

I am, Sirs, yours faithfully,

Flaxton, Yorks, July 26th, 1894. ALFRED KEBBELL.

BRISTOL AND ITS NEIGHBOURHOOD.

IN connexion with the recent meeting of the British Medical Association the official "Guide to Bristol and Clifton and the Bristol Channel Circuit" has been forwarded to us by the publishers, Messrs. T. Baker and Co. of Bristol. It is a complete and trustworthy account of Bristol and its surroundings.

DEATH FROM LIGHTNING.

ON Aug. 6th, at Thanington, near Canterbury, a cabdriver, who had just driven a bride and bridegroom to the village church, was killed by lightning. During the service the unfortunate man and his horse had sought refuge under a tree during a storm, and while there were struck by lightning, both being instantly killed.

Student.—Full information on the subject will be given in the Students Number of THE LANCET, which will be published on Sept. 1st.

CONVALESCENT HOME AT PEGWELL BAY.

ON Aug. 6th Mr. J. Passmore Edwards opened the new convalescent home at Pegwell Bay, near Ramsgate, which he has presented to the Working Men's Club and Institute Union. In his speech Mr. Edwards hoped that the home would prove of great use to the community for whom he had provided it. There is at present accommodation for twenty-five patients, but this can be increased as occasion requires.

Dr. J. S. Scriven.—The pitiable case described by our correspondent is not an uncommon one. The judge and the jury seem to have taken as lenient and sympathetic a view of the case as the due administration of the law would appear to have warranted. We do not see that our correspondent makes out a complete case of insanity, and in the absence of a report of the trial we are not able to form an opinion. We would recommend him to state the case fully, especially in relation to any evidence of the existence of insanity, and submit it with a report of the trial to the Home Secretary. We are sure that Mr. Asquith will give it full consideration with a view to further inquiry, if need be.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.) Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.).

TUESDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Gt. Northern Central (2.30 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Chelsea (2 P.M.), Soho-square (2 P.M.), North West London (2 P.M.).

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), Cancer (2 P.M.).

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

During the week marked copies of the following newspapers have been received:—*Sussex Daily News, Glasgow Herald, North British Daily Mail, Dundee Courier, Coleraine Chronicle, Bradford Observer, Birmingham Daily Post, Stafford Advertiser, Enniscorthy Guardian, Devon and Exeter Gazette, Scarborough Post, Weymouth Times, Wrexham Advertiser, Ilfracombe Gazette, Carnarvon Herald, Manchester Guardian, Express and Star (Wolverhampton), Hexham Courant, Western Mail, Walthamstow Guardian, Birkenhead News, Scotsman, General Advertiser, Hereford Journal, Cheltenham Examiner, Lichfield Mercury, Sunderland Herald, Halifax Mercury, Dover Standard, Local Government Chronicle, Sanitary Record, Public Health, City Press, Reading Mercury, Ilkeston Pioneer, Liverpool Courier, Hertfordshire Mercury, West Middlesex Standard, Weekly Free Press and Aberdeen Herald, Surrey Advertiser, Local Government Journal, Crewe Chronicle, West Middlesex Advertiser, Liverpool Daily Post, Times of India, Bristol Mercury, Architect, Yorkshire Post, Leeds Mercury, Pioneer Mail, Builder, Citizen, Evesham Journal, Morning, Yorkshire Herald, &c. &c.*

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